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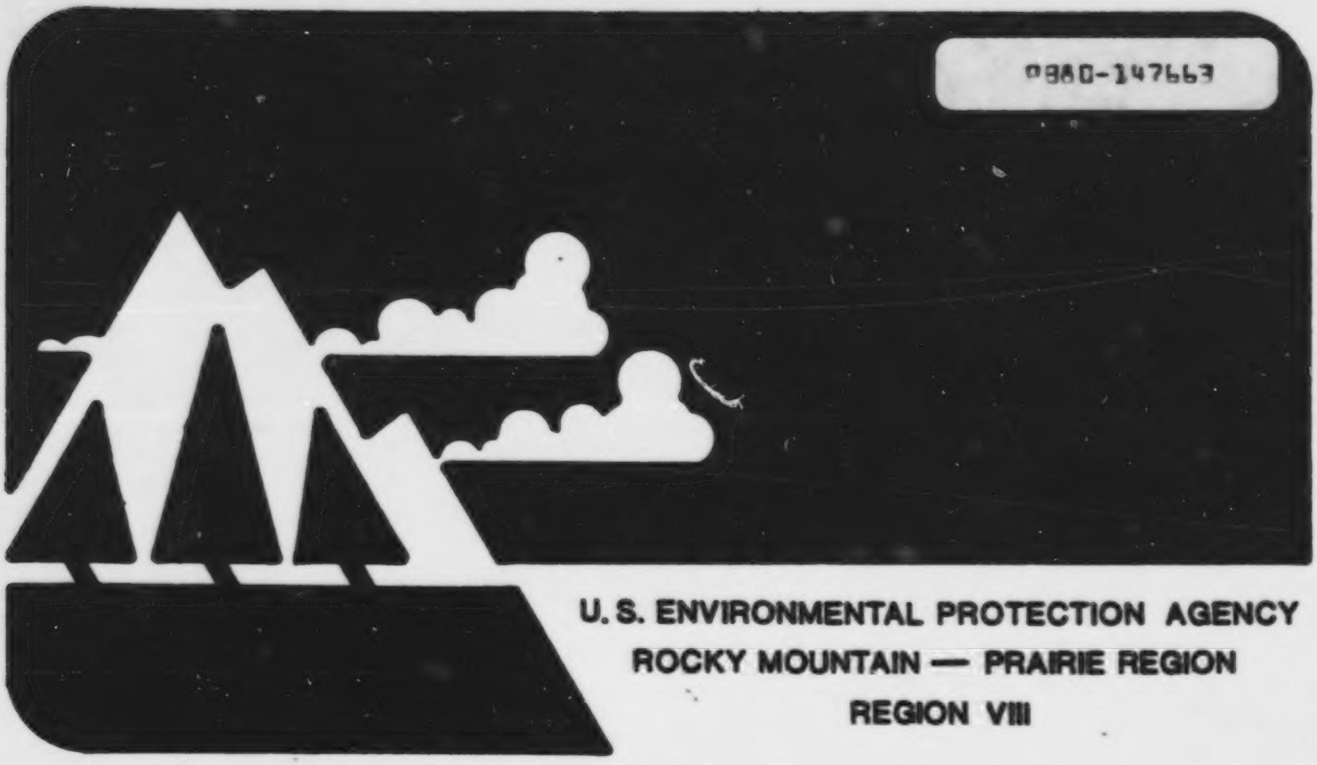

U.S. ENVIRONMENTAL PROTECTION AGENCY
ROCKY MOUNTAIN — PRAIRIE REGION
REGION VIII

WATER AND AIR QUALITY TRENDS IN REGION VIII
(1978 DATA)

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Denver, Colorado October 1979

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Water and air quality trends and status for the calendar year 1978 were determined for the six states in Region VIII. These states include Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming. Data resident in EPA national data banks (STORET, SAROAD) were analyzed.

Statistical tests which detect significant differences between two populations were utilized to show trends in both air and water quality. The status and severity of stream pollutants were determined by relating parameter concentrations to Water Quality Indicator (WQI) values on a numerical scale from 0 to 100. The status and severity of air pollutants reported continues to be a direct measure of air quality standard and alert level exceedences.

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WATER AND AIR QUALITY TRENDS

IN REGION VIII

(1978 DATA)

Data Analysis Branch
Surveillance and Analysis Division
Denver, Colorado
October 1979

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SECTION I

INTRODUCTION

Air and water quality monitoring activities have increased substantially in Region VIII over the past few years both in scope and frequency. These increases are due to public demand for accurate information about harmful pollutants in the environment and to the passage of Federal Legislation, namely, The Clean Air Act Amendments (1979) and the Federal Water Pollution Control Act of 1972 (Public Law 92-500). To fulfill the requirements of these legislative mandates State agencies have planned and developed extensive monitoring networks which have generated a mass of environmental quality data.

The purpose of this report is to present useful analytical summaries for Region VIII of the Environmental Protection Agency utilizing environmental quality data resident in the STORET (water) and SAROAD (air) data storage and retrieval systems. This report does not attempt to classify or precisely determine air and water quality or to analyze detailed cause and eff[illegible] relationships. It attempts, rather, to impart a sense of status and trend (i.e. improvement, degradation, etc.), by observing air and water quality measurements not only for current severity but also for changes over successive time periods.

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SUMMARY AND CONCLUSIONS

Water Quality

Trend analyses (1975-1977 vs. 1978) of all pertinent water quality data available in the STORET system for Region VIII indicates that 128 of 546 stations processed experienced significant changes (improvement or degradation) for at least one parameter group. Of those stations which exhibited significant trends and which were also found to have concentrations generally considered at critical levels during 1975, 1976, and 1977, 13 were found to have improved and 42 were found to have degraded.

The changes in quality that could be mostly attributed to the affects of man, as indicated by the stations where high fecal coliform bacteria concentrations are present, were observed at the stations listed below:

Significant Degradation

South Platte R at 60th Ave., Denver, CO
South Platte R at 88th Ave., Denver, CO
Colorado R nr Loma, CO
Arkansas R nr Coolidge, KS
Tongue R at WY-MT state line
Red River of the North nr Perley, MN
French Cr nr Custer, SD
White R nr Ouray, UT
San Juan R nr Bluff, UT

Significant Improvement

Yellowstone R at Huntley, MT
N Platte R blw Casper, WY

For the non-point sources of pollution, where total dissolved solids concentrations have been determined to be at critical levels, degradation occurred at 7 stations in the region and improvements were noted at 3 stations. Four of these occurrences were at stations on the Arkansas and South Platte Rivers in Colorado. Also, significant quality degradation was detected for the suspended sediments parameter at 9 stations on the larger tributaries of the Missouri River in Montana.

The section of this report entitled "Regional Summary" discusses in more detail the findings with regard to specific pollutant groups.

ANALYTICAL PROCEDURES - WATER

Water quality data (1975-1978) for 546 active monitoring stations in each of the six States of Region VIII were retrieved from STORET (EPA's computerized water quality data base) and screened through computerized trending techniques. Forty-six STORET water quality parameters which fall in the general categories of temperature, dissolved oxygen, pH, bacteria, trophic potential, dissolved solids, suspended solids, aesthetics, and inorganic toxicants were selected for this trend study and were analyzed in a two step process. First, to describe pollution severity, a water quality indicator (WQI) was computed for each observation of each parameter at all active stations and averaged on a monthly basis. The WQI may vary from zero to one hundred. A WQI less than 20 represents generally acceptable quality. The range from 20 to 60 signifies exceedence of water quality standards/criteria and the WQI greater than 60 represents exceedences of a severe nature. Wherever color coded maps are used in this report, the color blue, yellow, and red represent the respective range. Secondly, to determine pollution trends, the 15th, 50th (median) and 85th percentile values for two time periods were compared for each parameter with sufficient data. A standard statistical test, requiring at least six observations for a parameter in each time period was used to test for a significant difference between the two time periods. Significant changes in the 50th percentile measurements are generally indicative of overall changes in concentrations, while significant changes in the 85th percentile measurement (15th percentile for dissolved oxygen) are generally indicative of changes during critical periods. The criteria for determining improvement or degradation is described in a later table.

Severity Analysis

Water quality indicators (WQI's) were computed in order to assess the relative severity of a pollutant group at a given monitoring station. Each parameter concentration was graphically converted to a WQI and averaged on a monthly basis. This technique attempts to relate the concentration of various water quality parameters to a common numerical scale and is accomplished through the use of several "severity curves." These curves which relate concentration to WQI values were developed by the staff of EPA's Region X and exhibit the same general family characteristics and shape of the traditional curves which were developed for use with the original National Sanitation Foundation (NSF) Water Quality Index. Severity curves used for this analysis appear in the appendix.

Trend Analysis

The statistical test ("The Median Test," Practical Non-Parametric Statistics, W.J. Conover, John Wiley & Sons, Inc., New York, 1971, pages 167-172.) that was used to analyze water quality trends is a non-parametric technique for testing the hypothesis that random samples from two or more populations have the same median. The test is a special application of a chi-square contingency table test with fixed marginal totals. The same test can be used against other percentiles than the 50th but the discusssion here describes only the median.

Given k populations each with a random sample of size n_1, i=1,2---k, a test statistic can be constructed to test the hypothesis:

H_0: all k populations have the same median.

H_A: at least two populations have different medians.

The test statistic is computed from the 2xk contingency table:

Sample	1	2	3	. . . k	Total
Median*	O_{11}	O_{12}	O_{13}	. . . O_{1k}	a
Median*	O_{21}	O_{22}	O_{23}	. . . O_{2k}	b
Total	n_1	n_2	n_3	. . . n_k	N

$$T = \frac{N^2}{ab} \sum_{i=1}^{c} \frac{\left(O_{1i} - \frac{n_i a}{N}\right)^2}{n_i}$$

* Refers to overall median of the combined samples.

The test for the statistic assumes:

The samples are random.

The samples are independent of each other.

The measurement scale is ordinal.

If all populations have the same median, they have the same probability of an observation exceeding the median.

A large sample approximation is used to approximate T. The critical region of approximate size d corresponds to values of T greater than $x_1-\alpha$ the $(1-\alpha)$ quantile of a chi-square random variable with k-1 degrees of freedom. If T exceeds $x_i\alpha$ reject H_0; otherwise accept H_0. The author notes that the approximation may not be satisfactory if more than 20% of the n_i are less than 10, or if any of the n_i are less than 2. It further qualifies this rule of thumb for larger numbers of samples k.

The test was applied to each pollutant parameter at every station in the Region not only for the median but also the 15th, and 85th percentiles. Data observed during the years 1975 through 1977 comprise one test population and data from the year 1978 made up the other population. Each sample was required to have at least six observations. This technique made it possible to detect statistically significant differences between the two time periods.

The following procedures were used to determine if the observed significant differences represented an improvement or a degradation:

Examine the 15th and 50th percentile for dissolved oxygen - for all other parameters examine the 85th and 50th percentile.

If a significant difference between two time periods for either of the percentile statistics exists and both percentile statistics decrease from the first time period to the second, designate this as improvement. (For oxygen this is a degradation).

If a significant difference between two time periods for either of the percentile statistics exists and both percentile statistics increase from the first time period to the second, designate this as degradation. (For dissolved oxygen this is an improvement).

It was assumed that the samples were random and independent of one another. Given that these data are time series data, taken at irregular intervals, affected by seasonal cycles, etc., certain modifications of this technique might be advisable in future applications.

SECTION II

REGIONAL WATER QUALITY SUMMARY

REGIONAL OVERVIEW OF WATER QUALITY

A Summary of Parameter Groups at or Approaching Critical Levels

The color coded regional map displays that appear in this section generally describe problem areas identified through computer analysis of each parameter group. After all pertinent 1978 data resident in the national STORET data bank were screened they were converted to water quality indicator (WQI) values. WQI's range from 0 to 100 where a value of 20 represents parameter concentrations equivalent to the water quality standard or criteria and a value of 60 indicates concentrations at some level of severe impairment. In the graphic representations stations where WQI levels are between 45 and 60 appear as yellow dots and levels greater than 60 appear as red dots. The regional maps showing severity are generated from the Table of Critical Stations and Parameters in the section titled, "State Reports." The section on state reports also contains tables of Station and Parameter Group Coverage for each state. It should be recognized that even though problems may exist in areas where insufficient data were collected, no problem condition was reported. Since few occurrences of a critical nature were noted for temperature, dissolved oxygen, and pH, no maps are presented to describe these groups.

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Fecal Coliform Bacteria

The map on the facing sheet illustrates the general locations of the water quality monitoring stations contained in the Table of Critical Stations and Parameters.

Below are listed the most critical stations in the region. Fecal coliform bacteria WQI values for the States of Montana and Utah were based on USGS data only.

	Station	Avg. WQI
1.	Whitewood Cr at Pluma, SD	100
2.	Whitewood Cr nr Deadwood, SD	100
3.	Cache La Poudre R nr Greeley, CO	57
4.	Red River of the North at Fargo, ND	49
5.	S Platte R at Henderson, CO	47
6.	St Vrain Cr blw Longmont, CO	46
7.	Whitewood Cr nr Whitewood, SD	44
8.	Fountain Cr blw Colorado Springs, CO	43

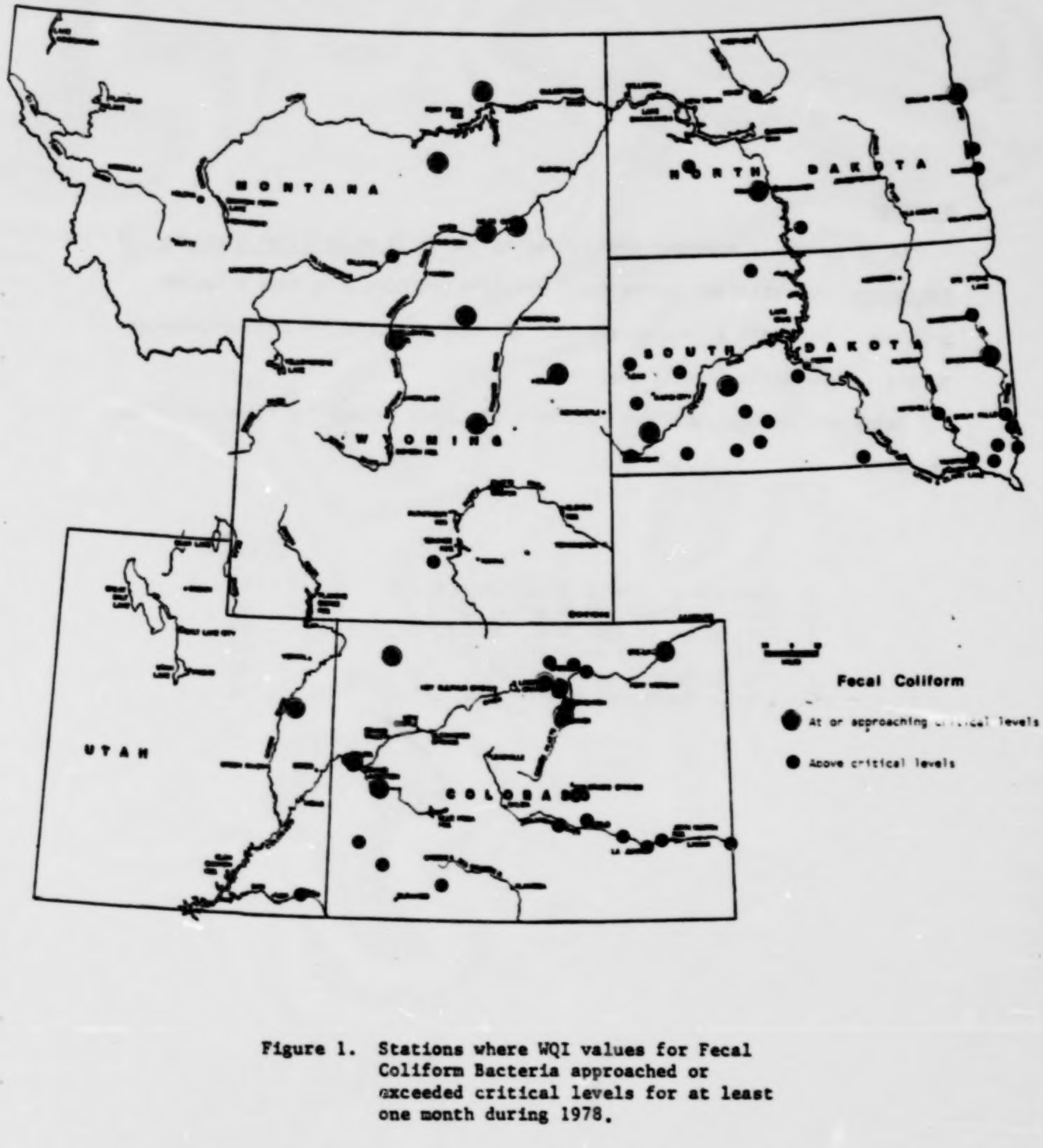
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
UTAH
COLORADO
Fecal Coliform
At or approaching critical levels
Above critical levels

Figure 1. Stations where WQI values for Fecal Coliform Bacteria approached or exceeded critical levels for at least one month during 1978.

Nitrogen

It is generally apparent from reviewing the Table of Critical Stations and Parameters that stations having fecal coliform problems also have nitrogen problems. The table also suggests that nitrogen problems are more pronounced during low streamflow conditions.

Below are the stations that had the highest WQI values for nitrogen in the region:

		Avg. WQI
1.	Fountain Cr blw Colorado Springs, CO	63
2.	Cache La Poudre nr Greeley, CO	62
3.	S Platte R at 60th Ave., Denver, CO	59
4.	Belle Fourche R nr Sturgis, SD	53
5.	Big Thompson R at Mouth, CO	50
6.	Little Thompson R nr Millikin, CO	49

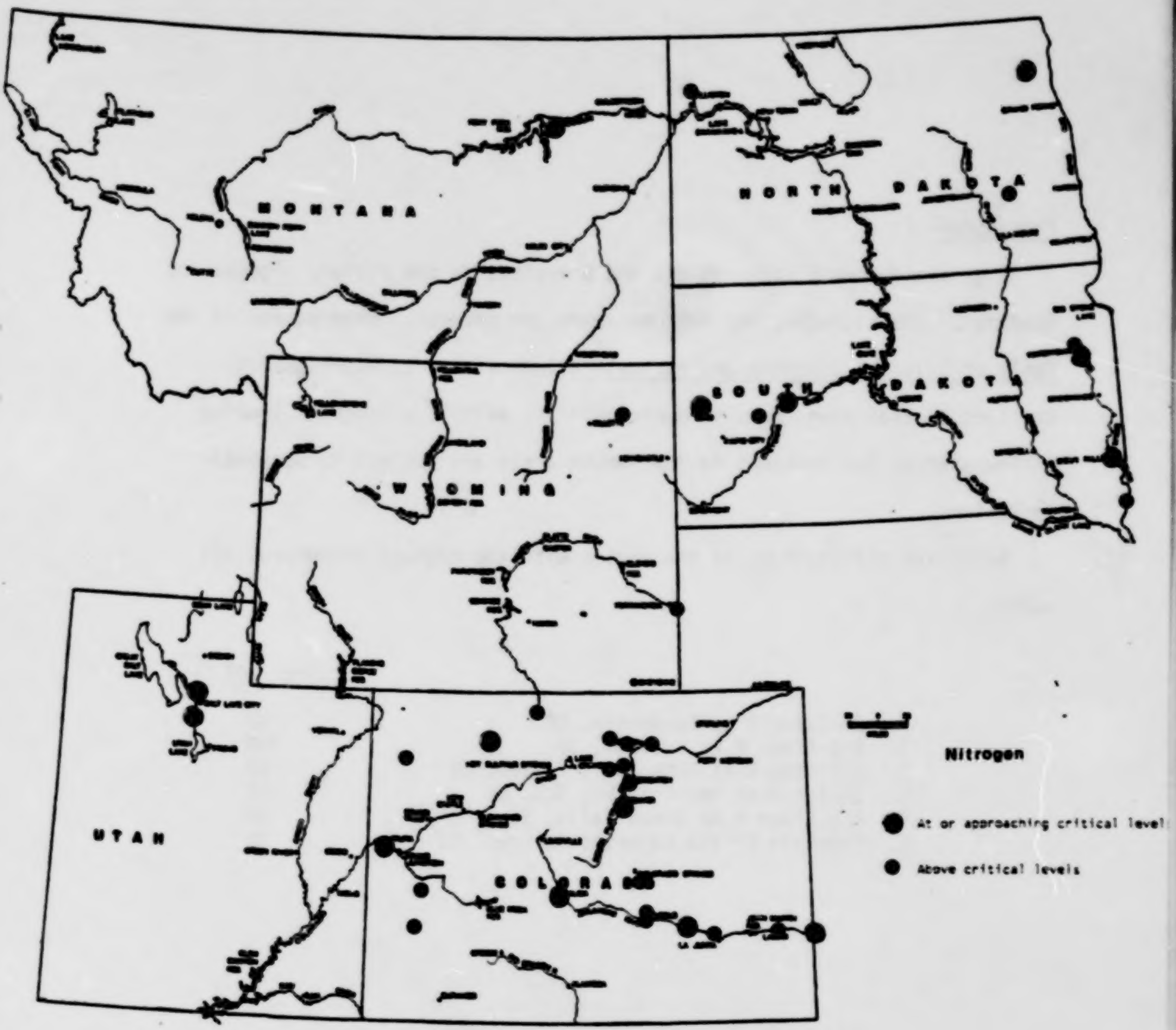
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
UTAH
COLORADO
Nitrogen
● At or approaching critical level
● Above critical levels

Figure 2. Stations where WQI values for Nitrogen approached or exceedec critical levels for at least one month during 1978.

Phosphorus

High phosphorus concentrations are prevalent in the region. Phosphorus loadings, like nitrogen, are both man-made and natural. Examination of the Table of Critical Stations and Parameters indicates that water quality stations located downstream of municipalities exhibit a constant loading inflow whereas the stations in the remote areas are subject to seasonal variations.

Below are the stations in the region with the highest phosphorus WQI values:

		Avg. WQI
1.	S Platte R at Henderson, CO	100
2.	Big Sioux R at Brandon, SD	100
3.	S Platte R at 88th Ave., Denver, CO	99
4.	Jordan R at Newstate Rd, SLC, UT	97
5.	Big Sioux R at Sioux Falls, SD	96
6.	Fountain Cr blw Colorado Springs, CO	95

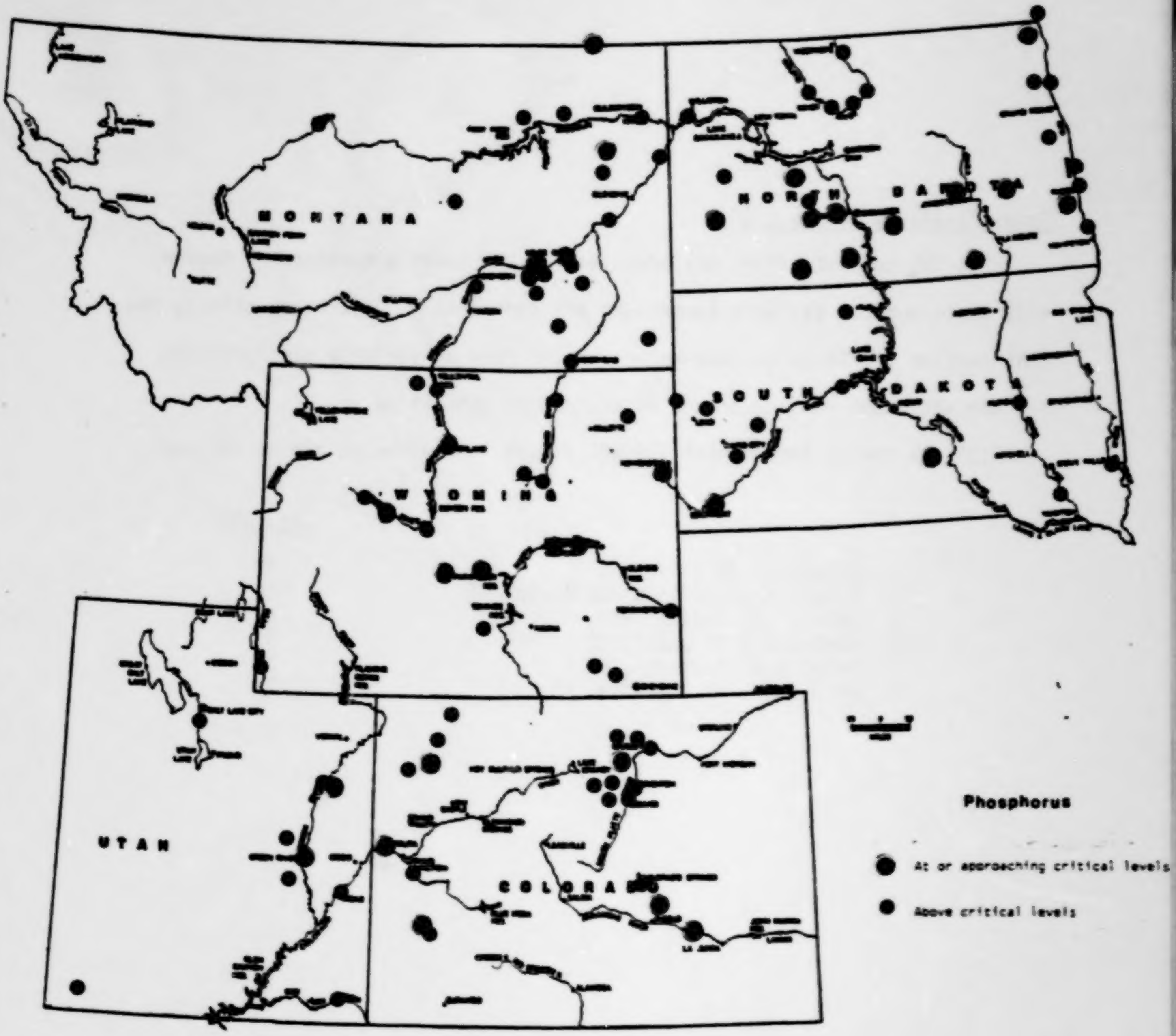
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
UTAH
COLORADO
Phosphorus
● At or approaching critical levels
● Above critical levels

Figure 3. Stations where WQI values for Phosphorus approached or exceeded critical levels for at least one month during 1978.

Total Dissolved Solids (TDS)

High TDS concentrations are prevalent in the lower elevations of Region VIII where surface geologic formations are sedimentary. Hydrology affects the contribution of TDS to surface waters in the form of variable precipitation and the attendant surface-ground water interrelationships.

Stations having the highest TDS WQI values in the region are as follows:

	Avg. WQI
1. Mizpah Cr at Olive, MT	92
2. E Fork Armells Cr nr Colstrip, MT	84
3. Salt Cr nr Sussex, WY	84
4. Arkansas R at Lamar, CO	83
5. Malad R nr Plymouth, UT	79
6. Arkansas R nr Coolidge, KS	79

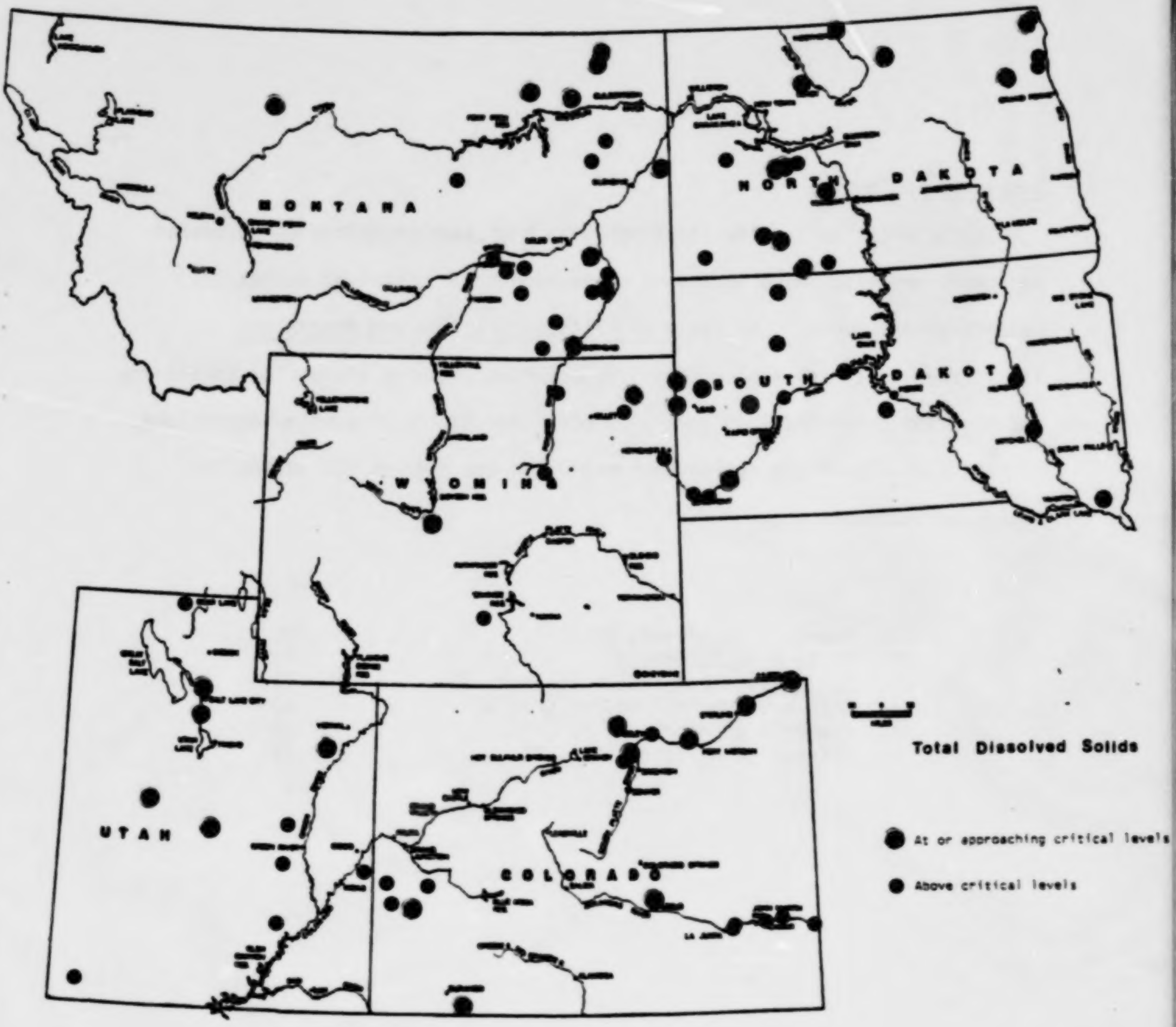
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
UTAH
COLORADO
Total Dissolved Solids
● At or approaching critical levels
● Above critical levels

Figure 4. Stations where WQI values for Total Dissolved Solids approached or exceeded critical levels for at least one month during 1978.

Suspended Sediment

Characteristically, the locations with high concentrations of suspended sediments are also those locations where high total dissolved solids concentrations occur. The Table of Critical Stations and Parameters illustrates that high suspended solids occur during high streamflow conditions and high TDS concentrations generally occur during low streamflow conditions.

The stations in the region that exhibited the highest WQI values for suspended sediments are:

		WQI
1.	Powder R at Arvada, WY	100
2.	White R nr Oacoma, SD	93
3.	Belle Fourche R nr Elm Springs, SD	91
4.	Little Missouri R nr Watford, ND	89
5.	Powder R at Moorhead, MT	87
6.	Missouri R nr Culbertson, MT	83

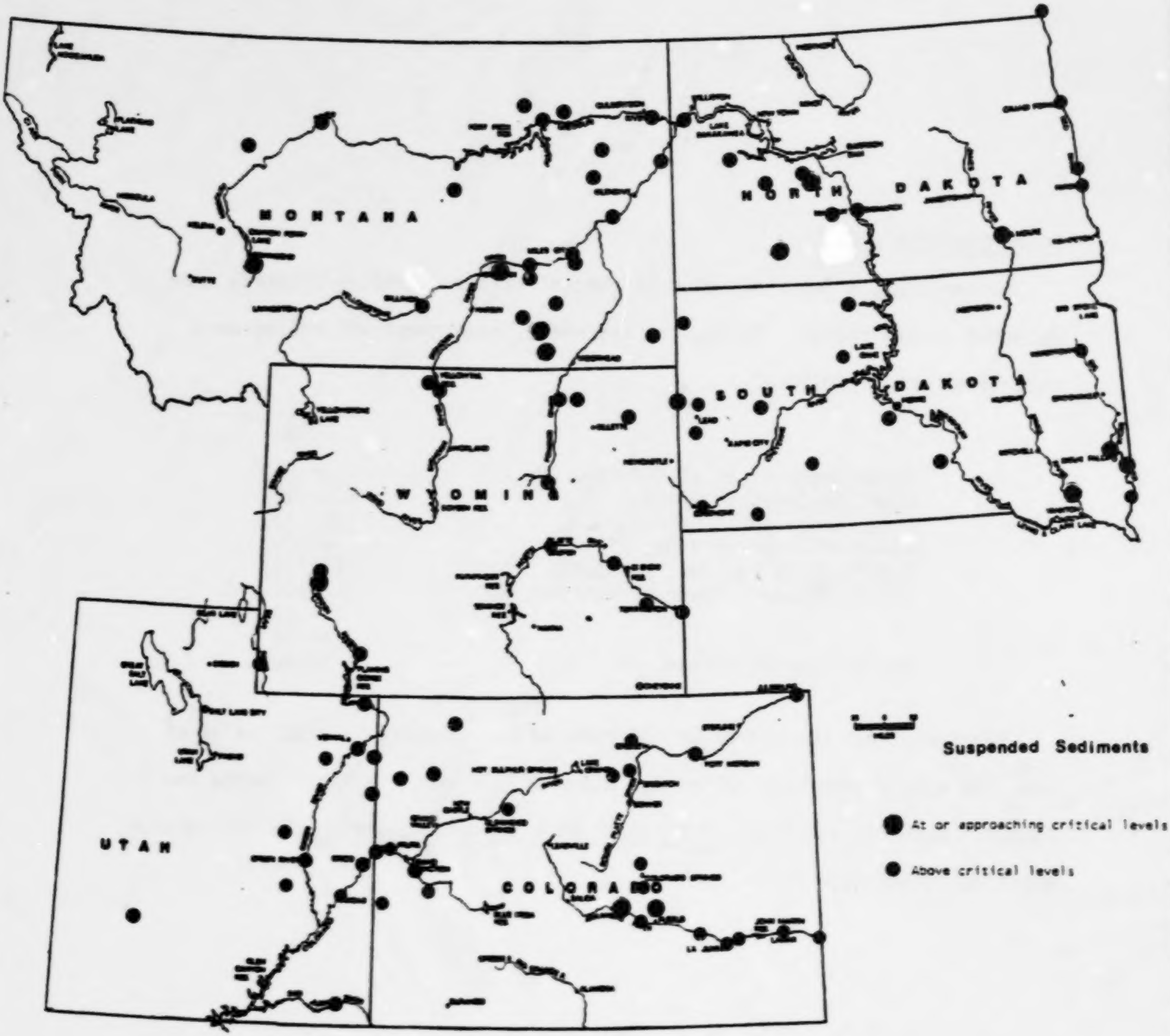
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
UTAH
COLORADO
Suspended Sediments
● At or approaching critical levels
● Above critical levels

Figure 5. Stations where WQI values for Suspended Sediments approached or exceeded critical levels for at least one month during 1978.

Trace Elements

During 1978, a few trace element concentrations exceeding criteria were detected in the region. Those stations where the highest WQI values were determined are as follows:

	WQI
Uncompahgre River at Ridgway, CO	(Cu= 78)
Fountain Creek at Pueblo, CO	(Cd=100)
Clear Creek above Golden, CO	(Pb= 78)
Redwater River at Vida, MT	(As=100)
Red River at Emerson, Manitoba	(CN=100)
Little Missouri River nr Watford, ND	(Cu=100, Cr= 68, Zn= 65)
Heart River at Mandan, ND	(CN=100)

Extremely high concentrations of cyanide as indicated by a WQI value of near 100 were predominate in the Red River of the North in North Dakota and Canada. Refer to the Table of Critical Stations and Parameters in the section entitled "State Reports."

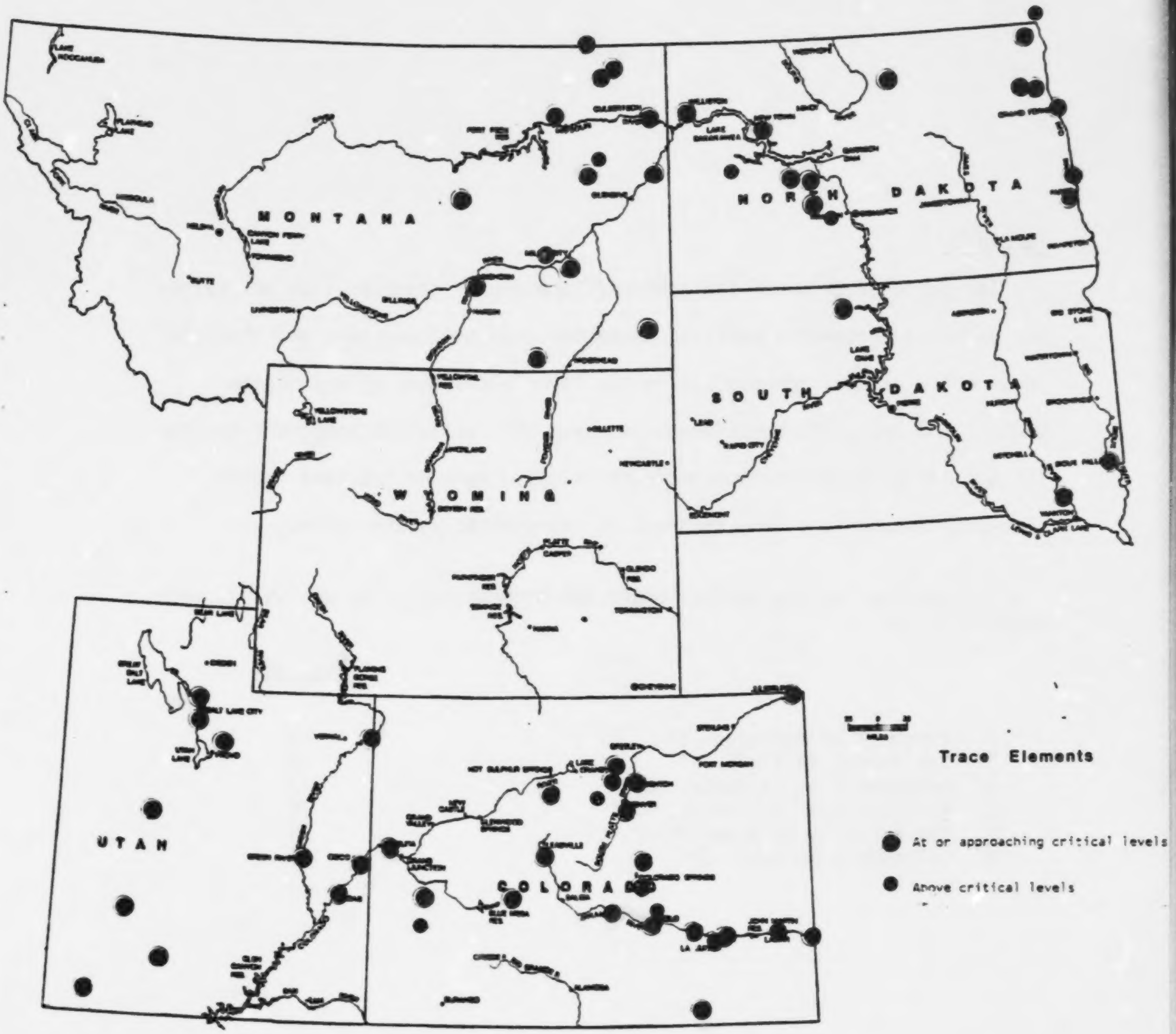
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
UTAH
COLORADO
SALT LAKE CITY
LA JUNTA
Trace Elements
● At or approaching critical levels
● Above critical levels

Figure 6. Stations where WQI values for Trace Elements exceeded criteria levels during 1978.

Turbidity

The Table of Critical Stations and Parameters indicates that WQI values for turbidity generally parallel those for suspended sediment and that the occurrences are most pronounced in the lower elevations of the region. Organic and inorganic constituents make-up this pollutant component and the susceptibility to be transported with relative ease by overland runoff (non-point source) is very apparent as represented in the tables.

The stations in the regions where the highest turbidity WQI values were observed are:

		Avg. WQI
1.	Powder R at Moorhead, WY	86
2.	San Juan R nr Bluff, UT	75
3.	Arkansas R nr La Junta, CO	73
4.	Missouri R nr Williston, ND	70
5.	San Rafael R nr Green River, UT	70
6.	Colorado R nr Loma, CO	66

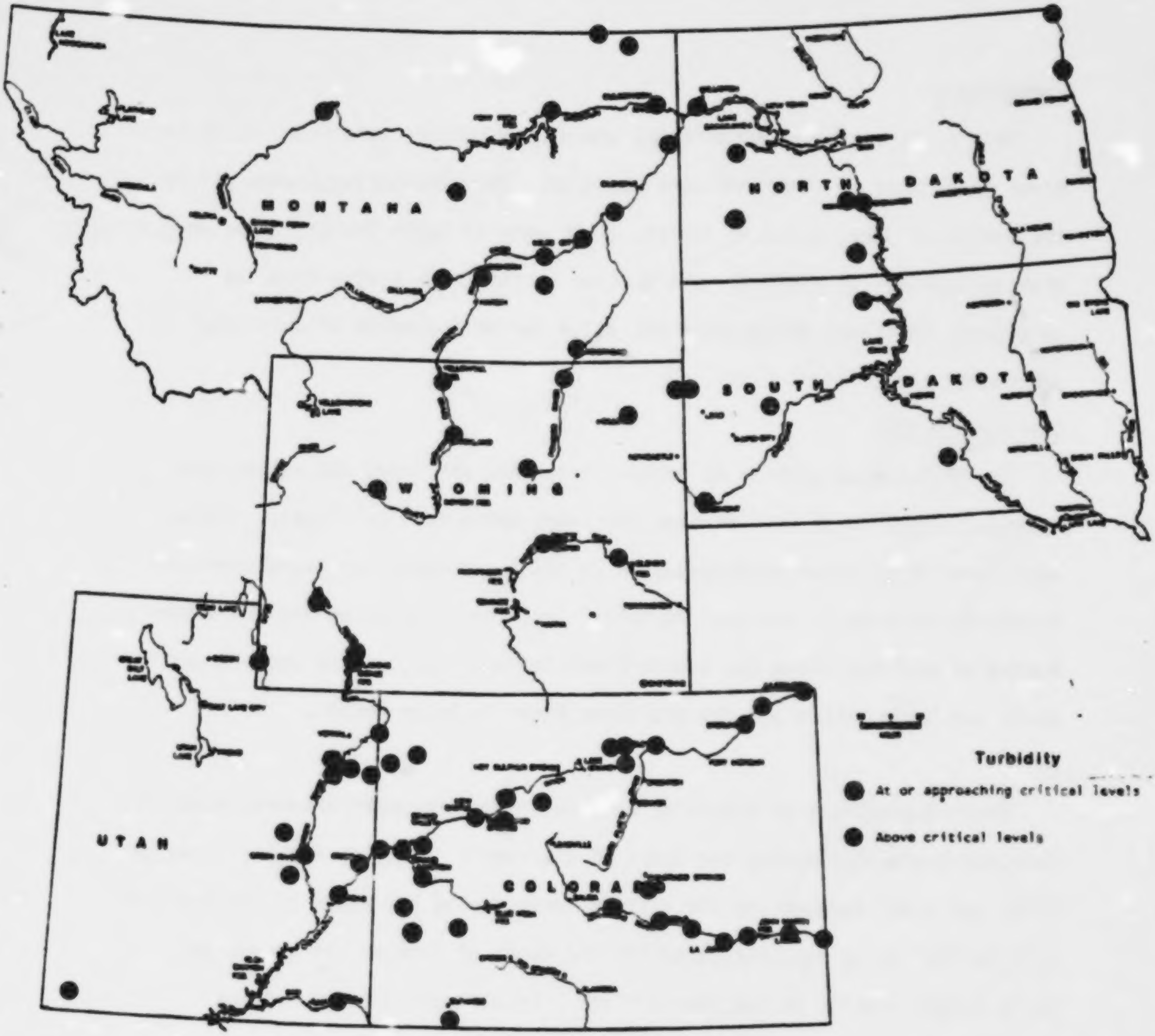
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
UTAH
COLORADO
Turbidity
At or approaching critical levels
Above critical levels

Figure 7. Stations where WQI values for Turbidity exceeded criteria levels during 1978.

Temperature

Only a few scattered occurrences where temperatures were found to be in minor exceedence of standards were observed. These occurrences were all in the months of June, July and August; eight were in South Dakota, three were in Utah and one was in Wyoming. One station on the South Platte River at Julesburg, Colorado, exhibited a WQI value during the month of July that approached the critical level.

Dissolved Oxygen

The 88th Avenue station at Denver, Colorado, exhibited WQI values that exceeded standards as well as some that were above critical levels. There were three other minor exceedences in Colorado. Seven minor exceedences of standards occurred in Montana. Critical levels were observed for the winter months at stations along the Souris River in North Dakota, the James River in North and South Dakota and the Big Sioux River in South Dakota.

pH

Minor exceedences of standards were noted for the upper Arkansas River in Colorado presumably during the start of the runoff in April. The Big Thompson River had a WQI approaching the critical zone during the month of January. A critical WQI value was calculated for the month of June at the Verendrye, North Dakota station on the Souris River. Levels approached a critical concentration on the Cheyenne River near Plainview, South Dakota during October. Minor exceedences of standards were found for the Shoshone River below Buffalo Bill Reservoir in Wyoming during the period August through October.

Un-ionized Ammonia

Water Quality Indicator values for un-ionized ammonia were determined at each station where the STORET parameters, total ammonia (NH_3-N), temperature and pH were observed for the same water sample. The calculation procedure is described in William T. Willingham's 1976 report, "Ammonia Toxicity."

The following stations exhibited ammonia concentrations at or near critical levels for at least 3 months of the year in 1978:

	Avg. WQI
1. South Platte River at Henderson, CO	36
2. South Platte River at 88th Ave., Denver, CO	46
3. Fountain Creek blw Colorado Springs, CO	32
4. San Miguel at Confluence Dolores R, CO	43
5. Big Sioux at North Cliff Avenue, SD	33

The Souris River near Westhope and near Verendrye exhibited exceptionally high WQI values in the months of June and July, 60 and 70 respectively.

Ammonia standards violations occurred at numerous other stations especially near urban communities. The findings will be the subject of a latter report.

Trophic Status

Nitrate and phosphate data are collected at numerous sites in this region but no definitive standards or criteria have been found generally acceptable or been adopted for them. The most notable adverse effect of these compounds (other than deleterious effects, caused by resultant nitrites when nitrates are chemically reduced) occurs when they are mutually present and provide a nutrient support for trophic conditions.

An attempt was made to determine trophic potential wherever nitrates and phosphates were observed in a common water sample. The analytical procedure involved (1) finding the ratio of nitrogen to phosphorus -- if the ratio were greater than 12 a phosphorus limited condition was assumed -- for a ratio less than 12 a nitrogen limited condition was assumed, (2) comparing the WQI of the limiting parameter to a harmonic function of the combined phosphate and nitrate WQI and reporting the smaller of these two values as the WQI for the corresponding trophic potential.

$$\frac{2\,(\text{phosphate WQI})\,(\text{nitrate WQI})}{\text{phosphate WQI} + \text{nitrate WQI}} \text{ vs. } \begin{array}{l}\text{phosphate WQI (P-limited) or}\\ \text{nitrate WQI (N-limited)}\end{array}$$

High trophic potentials occurred most frequently on the South Platte between Denver and Julesburg, on the Arkansas River between Pueblo and La Junta, the Jordan River between Bluffdale Road and New State Road, the Souris River near Verendrye, the Red River between Fargo and Grand Forks, and the Big Sioux River at several stations between Watertown and Richland, South Dakota.

STORET Parameter	STORET Number	Criteria/Std.	Group
Temperature °C	10	29°C	Temp.
Temperature °F	11	29°C	
D.O.	300	5 mg/l	DO
pH	400	6.5-8.5	pH
Fecal Coliform	31616	200	Fecal Coli.
"	31615	200	
"	31625	200	
Total Coliform	31501	1000	Total Coli.
"	31505	1000	
NO_2 & NO_3	630	0.6 mg/l	Trophic
NO_3 - N	620	"	
Nitrate	71850	"	
Nitrate	71851	"	
Total Phosphate	665	.05 mg/l	
Total Phosphate	666	"	
Ortho Phosphate	70507	"	
Ortho Phosphate	660	.09 mg/l	
Dis. O.-Phos.	671	.03 mg/l	
Turbidity	70	25	Aesthetic
Turbidity	76	25	
Oil & Grease	550	2	
Dissolved Solids	70300	500 mg/l	Dis. Solids
"	515	"	
"	70301	"	
Conductivity	95	750 µmho	
Suspended Solids	530	25 mg/l	Susp. Solids
"	70299	"	
"	80154	"	
Arsenic Dis.	1000	50 µg/l	Metals
" Total	1002	50 µg/l	
Cadmium Dis.	1025	3 "	
Cadmium Total	1027	3 "	
Chromium Dis.	1030	50 "	
" Total	1034	50 "	
Copper Dis.	1040	20 "	
" Total	1042	20 "	
Lead Dis.	1049	30 "	
" Total	1051	30 "	
Zinc Dis.	1090	80 "	
" Total	1092	80 "	
Mercury Dis.	71890	0.5 "	
" Total	71900	0.5 "	
Cyanide	720	.02 mg/l	
Un-ionized NH_3	619	.02 "	Inorg. Tox.
"	608	.02 "	
"	610	.02 "	

STORET Parameters and Pollutant Groups Analyzed
in the TREND REPORT

SECTION III

STATE WATER QUALITY REPORTS

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STATE WATER QUALITY REPORTS

This section is comprised of four major tables. The table, Ranking of Critical Water Quality Stations by Pollutant Group is a summary of stations where the highest WQI values were noted.

The table, Station and Parameter Group Coverage lists the active water quality monitoring stations in the state and a count of the number of data observations for each parameter group present in the STORET data system for the year 1978.

The Table of Critical Stations and Parameters utilizes the WQI calculation procedure to determine and display monthly standard exceedences by pollutant group and station location. This table of pollution severity also provides the average yearly WQI calculation for critical stations and a ranking factor for each station and parameter group. A ranking of 1 defines the station at the highest critical level in the State. This table reports on 1978 data only.

The Water Quality Trend Table lists stations where parameter groups exhibited significant changes over time as determined by statistical tests. This table shows quality improvement or degradation in each parameter group and points out those groups which are at or approaching critical levels. Data for 1975, 1976 and 1977 were trended against data for 1978 in determining this table.

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Colorado

Table 1. Ranking of Critical Water Quality Stations by Pollutant Group

Dissolved Oxygen		WQI*
1.	S Platte R at 88th Ave., Denver	41
Fecal Coliform Bacteria		
1.	Cache La Poudre nr Greeley	57
2.	S Platte R at Henderson	47
3.	St Vrain Cr blw Longmont	46
4.	Fountain Cr blw Colorado Springs	43
5.	S Platte R at 88th Ave., Denver	40
6.	Little Thompson R nr Milliken	39
Nitrogen		
1.	Fountain Cr blw Colorado Springs	63
2.	Cache La Poudre nr Greeley	62
3.	S Platte R at 60th Ave., Denver	59
4.	Big Thompson R at Mouth	50
5.	Little Thompson R nr Milliken	40
Phosphorus		
1.	S Platte R at 88th Ave., Denver	93
2.	S Platte R at Henderson	100
3.	Fountain Cr blw Colorado Springs	95
4.	S Platte R at 60th Ave., Denver	85
5.	Boulder Cr at Boulder-Weld County line	80
Turbidity		
1.	Arkansas R nr La Junta	73
2.	Colorado R nr Loma	66
3.	Gunnison R nr Grand Junction	57
4.	Arkansas R at Las Animas	51
5.	Uncompahgre R at Delta	53
Total Dissolved Solids		
1.	Arkansas R at Lamar	83
2.	Arkansas R nr Coolidge, KS	79
3.	Arkansas R blw John Martin Reservoir	67
4.	Dolores R abv San Miguel R	67
5.	Arkansas R at Las Animas	62
6.	Little Thompson R nr Milliken	55

Colorado

Table 1 (continued)

Ranking of Critical Water Quality Stations by Pollutant Group

Suspended Sediment	WQI*
1. Colorado R nr CO-UT state line	68
2. Little Snake R nr Lily	68
3. Arkansas R nr La Junta	66
4. White R nr Watson, UT	64
Trace Elements	
1. Fountain Cr at Pueblo	Cu=100
2. Clear Cr abv Golden	Pb= 78
3. Uncompahgre R at Delta	Cu= 78

* Average annual water quality indicator (WQI) value. A range from 20 to 60 signifies exceedence of water quality standards/criteria and the WQI greater than 60 represents exceedences of a severe nature.

Table 2. STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Colorado

Reproduced from best available copy.

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21CODHWC 001109 SO PLAT SO FRK CHEESMAN RES OUTL											
21CODHWC 001112 SO PLAT SO FRK ABV CONF OF N FRK											
21CODHWC 001202 SO PLAT N FRK BLW BAILEY CROSSNG											
21COL001 000025 SOUTH PLATTE RIVER NEAR TOWN OF SOUTH PL	5	5	5	5	5	4	5	9	4	5	17
21CODHWC 001301 SO PLAT AT INTAKE STRUCTURE											
21COL001 000024 SOUTH PLATTE ABOVE LITTLETON	16	16	16	16	14	10	16	30	16	15	45
21CODHDP 1513 SOUTH PLATTE R AT BOWLES AVENUE											
21CODHDP 1091 SOUTH PLATTE R AT DARTMOUTH AVE											
21CODHDP 0699 SOUTH PLATTE R AT ALAMEDA AVENUE											
21CODHDP 0305 SOUTH PLATTE R @ 19TH ST BRIDGE											
21CODHDP 0001 SO PLATTE R @ FRANKLIN ST BRIDGE											
21COMETR 000002 S PLATTE @ 60TH AVE MDSDD NO.1	1	1	99	199	1	26	1	1		1	
21COMETR 000004 S PLATTE @ 88TH AVE MDSDD NO.1	1	1	1	1	1	218	1	1		1	
21COMETR 000010 SOUTH PLATTE @ 124TH	8	8	8	8	7	15	8	7		14	
21COL001 000023 SOUTH PLATTE AT HENDERSON	16	16	16	15	14	10	18	31	18	15	56
112WRD 06720500 SOUTH PLATTE RIVER AT HENDERSON,	11										
21COL001 000022 SOUTH PLATTE NEAR KERSEY	15	15	15	15	11	8	16	31	14	14	39
112WRD 06754000 SOUTH PLATTE RIVER NEAR KERSEY,	21	15	18			35		36			
112WRD 06758500 SOUTH PLATTE RIVER NEAR WELDONA,	74	16	19			31		36	57		
112WRD 06760000 SOUTH PLATTE RIVER AT BALZAC, CO											
21COL001 000128 SOUTH PLATTE BELOW STERLING	5	5	5	4	4	3	5	11	5	4	21
21COL001 000020 SOUTH PLATTE R (IN NEBRASKA) NEAR JULESB	5	5	5	4	6	3	6	11	6	4	21
112WRD 06764000 SOUTH PLATTE RIVER AT JULESBURG,	12	36	12	12	12	24	12	36	10	12	56
112WRD 06764200 SOUTH PLATTE RIVER NEAR JULESBUR											
1110MET 070092 SOUTH PLATTE RIVER AT JULESBURG											

Table 2 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Colorado

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 09019000 COLORADO RIVER BELOW LAKE GRANBY	5							5			
112WRD 09034500 COLORADO RIVER AT HOT SULPHUR SP	13	12	12			28		26			
21COL001 000045 COLORADO RIVER NEAR HOT SULFUR SPRINGS	4	4	2	3	3	2	4	8	3	4	14
112WRD 09070500 COLORADO RIVER NEAR DOTSERO, CO.	5	4	4			12		10			
21COL001 000046 COLORADO RIVER NEAR DOTSERO	12	11	9	11	10	10	11	25	12	12	41
112WRD 09071100 COLORADO RIVER NEAR GLENWOOD SPR	11	11	11			25		22			
21COL001 000047 COLORADO RIVER AT NEW CASTLE	11	11	8	12	10	9	12	23	11	11	30
112WRD 09095500 COLORADO RIVER NEAR CAMEO, CO.	11	10	11			26		22			
21COL001 000048 COLORADO RIVER NEAR CAMEO	3	3	2	3	3	2	3	6	3	2	8
21COL001 000049 COLORADO RIVER NEAR FRUITA	4	4	2	3	4	1	4	8	4	3	14
21COL001 000050 COLORADO RIVER NEAR LOMA	13	13	9	11	11	10	13	26	12	12	48
112WRD 09163500 COLORADO RIVER NEAR COLORADO-UTA									12		
21COL001 000069 ARKANSAS R. BELOW LEADVILLE, COL	4	4	2	4	3	2	4	8	4	3	15
21COL001 000008 ARKANSAS RIVER NEAR SALIDA											
21COL001 000007 ARKANSAS RIVER NEAR CANON CITY	6	6	6	4	5	3	6	11	6	4	28
112WRD 07096000 ARKANSAS RIVER AT CANON CITY, CO	8										
112WRD 07099200 ARKANSAS RIVER NEAR PORTLAND, CO	12	10	11			21		24	22		
112WRD 07099400 ARKANSAS RIVER ABOVE PUEBLO, CO.	8										
21COL001 000006 ARKANSAS RIVER NEAR PUEBLO	5	6	5	6	5	4	5	12	5	6	24
113HRKCP 070995 ARKANSAS RIVER NEAR PUEBLO, COLO											
21COL001 000005 ARKANSAS RIVER NEAR NEPESTA	21	21	20	22	17	13	20	41	18	19	53
21COL001 000090 ARKANSAS AT CATLIN CANAL HDGT	4	4	4	4	4	2	3	8	4	4	15
21COL001 000004 ARKANSAS RIVER NEAR LA JUNTA	20	20	20	18	16	12	18	40	18	17	48
112WRD 07122000 ARKANSAS RIVER NEAR LA JUNTA, CO											
21COL001 000003 ARKANSAS RIVER AT LAS ANIMAS	6	6	6	5	4	3	6	12	7	4	27

Table 2 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Colorado

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 07130500 ARKANSAS RIVER BELOW JOHN MARTIN	11	9	11			22		22			
112WRD 07133000 ARKANSAS RIVER AT LAMAR, CO.	15							15			
21COL001 000002 ARKANSAS RIVER AT LAMAR, COLO	6	6	6	5	5	3	5	12	7	4	24
21COL001 000001 ARKANSAS RIVER NEAR COOLIDGE, KANSAS	23	24	23	23	17	15	19	38	19	14	49
21COGF&P CRD003 RIO GRANDE ABV CONF W WILLOW CK											
21COGF&P CRD004 RIO GRANDE AT BRG NEAR WASSON RN											
21COL001 000019 RIO GRANDE AT ALAMOSA	6	6	6	7	4	2	5	10	5	5	23
21COL001 000018 RIO GRANDE EAST OF MANASSA	10	10	10	10	7	4	8	15	8	9	34
112WRD 08251500 RIO GRANDE NEAR LOBATOS, CO.	29	9	11	7	11	22	15	33	12	11	56
21COL001 000037 NORTH PLATTE BELOW COWDREY	3	3	1	2	3	1	3	6	3	1	13
112WRD 06620000 NORTH PLATTE RIVER NEAR NORTHGAT	22	12	7	11	12	12	12	27			
21COL001 000112 CONEJOS RIVER NEAR MAGOTE	6	6	6	6	6	3	6	11	5	6	28
112WRD 06747500 CACHE LA POUDRE RIVER NEAR RUSTI											
112WRD 06752000 CACHE LA POUDRE R A MO OF CN, NR	26	12	12			39		23		12	
112WRD 06752260 CACHE LA POUDRE RIVER AT FORT CO	12	11	12			39		24		12	
21COL001 000026 CACHE LA POUDRE ABOVE FT COLLINS	4	4	4	4	3	3	3	6	4	3	17
21COL001 000126 CACHE LA POUDRE NEAR FT. COLLINS	17	17	17	17	15	11	15	35	17	17	45
112WRD 06752500 CACHE LA POUDRE RIVER NEAR GREEL	12	10	12			23		25			
21COL001 000027 CACHE LA POUDRE NEAR GREELEY	15	15	15	15	13	8	16	31	15	15	39
112WRD 06733000 BIG THOMPSON RIVER AT ESTES PARK	19										
112WRD 06734900 OLYMPUS TUNNEL AT LAKE ESTES, CO	11	11	11	10	11	36		33		11	
112WRD 06736700 BIG THOMPSON R ABOVE DILLE TUNNE	12	12	12	12				12			
112WRD 06744000 BIG THOMPSON RIVER AT MOUTH, NEA	23	11	12			23		24			
21COL001 000028 BIG THOMPSON NEAR MOUTH	17	17	17	17	15	11	17	34	17	17	50
21COL001 000124 LITTLE THOMPSON NEAR MILLIKEN	17	17	17	16	14	11	17	34	16	17	41

Table 2 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Colorado

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21COL001 000114 BIG THOMPSON NEAR LOVELAND	4	4	4	3	4	2	4	5	3	3	17
21COL001 000123 LITTLE THOMPSON NEAR BERTHOUD	4	4	4	4	4	2	4	8	4	4	17
21COL001 000125 BIG THOMPSON RIVER BELOW ESTES PARK	3	3	3	3	3	2	3	6	3	3	13
21COL001 000031 ST VRAIN BELOW LONGMONT	17	17	17	17	16	10	16	34	17	17	47
21COL001 000033 BOULDER CR. AT BLDR WELD CO LINE	17	17	17	17	15	10	17	34	16	16	47
21COL001 000030 ST VRAIN AT WELD BOULDER CO LINE											
112WRD 06722000 N ST. VRAIN CREEK AT LONGMONT DA	9	9	9			16		17			
112WRD 06723400 SOUTH ST. VRAIN CREEK ABOVE LYON	8	8	8			16		16			
112WRD 06731000 ST. VRAIN CREEK AT MOUTH, NEAR P	15	11	12			23		24			
21COL001 000035 CLEAR CREEK ABOVE GOLDEN	13	13	13	13	12	9	15	25	15	12	41
21COL001 000089 CLEAR CREEK AT WHEAT RIDGE, COLO	15	15	15	15	11	10	16	30	15	14	37
21COL001 000016 FOUNTAIN CREEK BELOW COLORADO SP	20	20	20	17	14	11	18	39	18	16	53
21COL001 000015 FOUNTAIN CREEK AT PUEBLO	4	5	5	6	6	3	4	12	6	6	27
21COL001 000017 FOUNTAIN CREEK NEAR MANITOU	5	6	6	5	5	3	6	11	6	4	26
21COL001 000052 EAGLE RIVER AT GYPSUM	12	12	9	13	11	10	12	25	12	12	34
21COL001 000076 EAGLE RIVER AT TOWN OF EDWARDS	11	10	7	11	9	9	12	23	11	11	30
21COL001 000083 HOMESTAKE CRK @ HORNSILVER CMPGR	3	3	1	3	3	1	3	4	3	2	13
21COL001 000053 ROARING FORK AT MOUTH	13	13	10	14	11	10	14	28	13	13	39
21COL001 000054 GUNNISON SOUTHEAST OF GRD JUNCT	11	11	8	12	9	9	12	24	11	11	36
21COL001 000056 GUNNISON RIVER NEAR DELTA	4	4	2	4	4	2	4	8	4	4	15
21COL001 000057 GUNNISON RIVER WEST OF GUNNISON	5	5	5	5	4	2	5	10	5	4	15
21COL001 000100 N FK OF GUNNISON BELOW HOTCHKISS	3	4	2	4	4	2	4	8	4	4	16
112WRD 09152500 GUNNISON RIVER NEAR GRAND JUNCTI	12	11	12	10	11	25	12	35	10	11	54
21COL001 000055 UNCOMPAHGRE RIVER AT DELTA	13	13	9	11	10	9	13	25	12	12	46
21COL001 000079 UNCOMPAHGRE RIVER AT RIDGWAY	5	5	5	5	5	2	5	9	5	4	22

Table 2 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Colorado

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21COL001 000061											
DOLORES RIVER AT GATEWAY	3	3	1	3	3	1	3	5	3	2	7
21COL001 000080											
DOLORES RIVER NEAR TOWN OF DOLORES	4	4	4	5	5	2	4	9	5	5	24
21COL001 000085											
DOLORES RIVER ABOVE CONFLUENCE WITH SAN	11	10	11	11	7	6	10	18	9	8	36
21COL001 000084											
SAN MIGUEL AT CONFL WITH DOLORES	9	8	9	9	9	4	9	15	9	8	26
21COL001 000101											
SAN MIGUEL NEAR NORWOOD	4	3	4	4	4	1	4	8	5	2	17
112WRD 09177000											
SAN MIGUEL RIVER AT URAVAN, CO.	16	14	16	5	13	18	13	37	11	13	
112WRD 09177100											
SAN MIGUEL RIVER BELOW URAVAN, C	14	14	14	4	13	13	13	33	11	13	
112WRD 09304200											
WHITE RIVER ABOVE COAL CREEK, NE	9							9			
112WRD 09304800											
WHITE RIVER BELOW MEEKER, CO.	12	12	12		12	12		22	12	12	28
112WRD 09306300											
WHITE RIVER ABOVE RANGELY, CO.	12	12	12		12	12		24	32	12	28
112WRD 09306500											
WHITE R NR WATSON UT	18	6	2		4	14	4	21	10	4	14
21COL001 000043											
WHITE RIVER AT MEEKER	4	4	2	4	4	2	4	8	4	4	15
21COL001 000044											
WHITE RIVER AT RANGELY	4	4	2	4	4	2	4	8	4	3	15
21COL001 000117											
WHITE RIVER BELOW PICEANCE CRK.	4	4	2	4	3	2	4	8	4	4	15
21COL001 000038											
YAMPA RIVER AT MILNER	6	6	4	5	4	3	5	10	5	4	21
21COL001 000039											
YAMPA RIVER NEAR MAYBELL	4	4	2	3	4	2	4	8	4	4	11
21COL001 000040											
YAMPA BELOW LITTLE SNAKE RIVER	4	4	2	4	4	2	4	8	4	4	15
21COL001 000041											
LITTLE SNAKE ABOVE LILY	4	4	2	4	4	2	4	8	4	4	14
21COL001 000088											
YAMPA ABOVE OAK CREEK CONFLUENCE	4	4	2	3	4	2	4	7	4	3	15
112WRD 09251000											
YAMPA RIVER NEAR MAYBELL, CO.	12	9	12	7	12	24	12	35	6	12	40
112WRD 09260000											
LITTLE SNAKE RIVER NEAR LILY, CO	12	8	12	7	12	24	12	35	61	12	42
21COL001 000063											
SAN JUAN RIVER NEAR STATE LINE	4	4	4	4	4	2	4	8	4	4	20
21COL001 000068											
SAN JUAN ABOVE NAVAJO RESERVOIR	5	4	5	3	4	2	4	10	5	4	24
21COL001 000119											
SAN JUAN RIVER BELOW PAGOSA	5	5	5	4	6	3	5	10	5	4	22
21COL001 000069											
PIEDRA RIVER NE OF ARBOLES, COLO	6	5	6	5	4	2	3	10	5	4	23

Table 2 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Colorado

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112680 09347200											
MIDDLE FORK PIEDRA RIVER NR PAGO											
21COL001 000067											
LOS PINOS RIVER NEAR LABOCA	5	3	4	5	4	2	3	8	4	4	19
21COL001 000066											
ANIMAS RIVER NEAR BONDAD, COL.	5	4	5	5	6	2	6	11	7	4	22
21COL001 000081											
ANIMAS RIVER ABOVE DURANGO	5	5	5	5	5	4	4	9	4	5	21
21COL001 000082											
ANIMAS RIVER NEAR SILVERTON	5	5	5	5	5	4	4	8	4	5	20
21COL001 000065											
LA PLATA R NORTH OF LA PLATA	4	3	4	4	5	1	5	10	6	3	15
21COL001 000104											
LA PLATA RIVER AT HIGHWAY 160	4	4	4	4	5	1	5	10	6	3	16
21COL001 000064											
MANCOS RIVER 3 MILES NORTH OF STATE LINE	4	4	4	4	4	2	5	8	4	5	23
21COL001 000103											
MANCOS RIVER AT MANCOS	6	6	6	6	6	2	6	12	6	6	24

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Table 3 .   TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Temperature														
S Platte R at Julesburg							○							
Dissolved Oxygen (DO)														
S Platte R at 88th Ave., Denver	●	X	X	X	X	-	X	●	-	-	-	-	41	
S Platte R at 124th Ave., Denver	-	-	-	-	-	-	-	X	-	-	-	-		
Uncompangre R at Delta				○										
Little Snake R nr Lily				X										
pH														
Arkansas R nr Canon City		X		X										
Arkansas R nr Portland				X										
Arkansas R nr Nepesta						X								
Arkansas R at Catlin Canal				X										
Rio Grande R nr Manassa				X										
Big Thompson R nr Mouth	○													
Animas R nr Silverton		○												
Fecal Coliform Bacteria														
S Platte R at 60th Ave., Denver					○	-	○	●	-	-	-	-	26	
S Platte R at 88th Ave., Denver	○			○		-	○		-	-	-	-	40	5
S Platte R at Henderson		●		-	-		●	●	●			-	47	2
S Platte R at Kersey				-	-			-		●		-	36	
S Platte R blw Sterling	-	-		-	-	○	-	-	-		-	-		
Colorado R nr Fruita	-		-	○	-	-	-	-	-		-	-		
Colorado R nr Loma		-	-		●		-	-					30	
Arkansas R nr Nepesta		-	-		○	●							20	
Arkansas R nr La Junta						●	○	○		-			31	
Arkansas R at Las Animas	-		-		-	●	-	●	-	-	-			
Arkansas R nr Coolidge, KS					●	●							22	
Cache La Poudre nr Ft. Collins				-	-		●						5	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels   ● Above critical levels   – Insufficient data

Table 3 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Fecal Coliform Bacteria Continued														
Cache La Poudre nr Greeley	●			-	-	●		-	●	●	●	-	57	1
Big Thompson R blw Estes Park	-	-	-	-	-	○	-	-	-		-	-		
Big Thompson R nr Mouth				-	-		○	○	○	○			37	
Little Thompson R nr Milliken	-			-	-	○	○	○	○				39	6
St Vrain Cr blw Longmont			-	-			○		○	●	●		46	3
Boulder Cr at Bldr-Weld Cos			-	-		○							33	
Clear Cr at Wheat Ridge							○						21	
Fountain Cr blw Colorado Springs		●			○	●		-	●				43	4
Fountain Cr at Pueblo												●	19	
Gunnison R nr Delta		●												
Uncompahgre R at Delta										○			27	
Dolores R abv San Miguel R								●		●			22	
Little Snake R nr Lily								○					18	
San Juan R blw Pagosa Springs		●												
Animas R nr Silverton								●						
Nitrate														
S Platte R abv Littleton		○	○	-	-								23	
S Platte R at 60th Ave., Denver	●	●	●	○	●			○					59	3
S Platte R at Henderson		●												
S Platte R nr Kersey							●		○	●	○			
Color[illegible] R nr Loma				○									17	
Arkansas R nr Salida	○													
Arkansas R nr Pueblo								●					39	
Arkansas R nr Nepesta	○												29	
Arkansas R nr La Junta		●		●									43	6
Arkansas R at Lamar				●										
Arkansas R nr Coolidge, KS									○				22	
N Platte R blw Cowdrey		●												
Cache La Poudre nr Ft. Collins	●	●								●	●	-	48	
Cache La Poudre nr Greeley		●	●	-	-		○	-	○	○	●	-	62	2

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 3 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Nitrate Continued														
Big Thompson R at Mouth	●	●		-	-		●				○	-	50	4
Little Thompson R nr Milliken	●	●	●	-	-						○	-	49	5
St Vrain Cr blw Longmont	●	●		-	-		○					-	42	
Boulder Cr at Bldr-Weld Cos	○			-	-					●		-	31	
Fountain Cr blw Colorado Springs		●			○	●		●	-	●	●	●	63	1
Fountain Cr at Pueblo	-	○	-	●	-	●	-	●	-	○	-	○		
Uncompahgre R at Delta		●	-	○	●								47	
San Miguel R at Mouth	●	●											29	
Yampa R at Milner		○												
Yampa R nr Maybell										●				
Phosphorus														
S Platte R at 60th Ave., Denver	●	●	●	●	●	●	●	●	●	●	●	●	85	4
S Platte R at 88th Ave., Denver	●	●	●	●	●	-	●	●	-	-	-	-	99	1
S Platte R " 124th Ave., Denver	-	-	-	-	-	-	-	●	-	-	-	—		
S Platte R at Henderson	-	-	-	-	-	-	●	-	●	●	●	-	100	2
S Platte R nr Kersey	-	-	-	-	-	○	○	-	-	●	●	-	71	
Colorado R nr Loma					○								16	
Arkansas R nr Nepesta											○	○	42	
Cache La Poudre nr Ft. Collins							●	○			●		51	
Cache La Poudre nr Greeley							○			●	●		62	
Big Thompson R nr Mouth										○	○		34	
St Vrain Cr blw Longmont									○	●	●		55	
Boulder Cr at Bldr-Weld Cos							●	●	●	●	●		80	5
Clear Cr at Wheat Ridge									●	○	●		53	
Fountain Cr blw Colorado Springs					●	●	●	●	●	●	●	●	95	3
Fountain Cr at Pueblo												○	33	
Gunnison R nr Grand Jct				○									17	
San Miguel R at Uravan				●		○							14	
San Miguel R blw Uravan						○							14	

X Minor exceedance of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 3. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Phosphorus Continued														
White R blw Meeker				○									15	
White R abv Rangely			●	●									27	
Yampa R nr Maybell			●	●									23	
Little Snake R nr Lily			●	○	●				○				40	
Turbidity														
S Platte R nr Kersey						●							25	
S Platte R blw Sterling						●								
St Platte R nr Julesburg			●			●							35	
Colorado R nr Dotsero				○									15	
Colorado R at New Castle					●								19	
Colorado R nr Cameo				●										
Colorado R nr Fruita		●		●										
Colorado R nr Loma		●	-	●	●	●			●			-	66	2
Arkansas R nr Canon City						○								
Arkansas R nr Nepesta	○				●	-	●	●					43	
Arkansas R nr La Junta	○	●	●		●	●	●	●	●	-	●		73	1
Arkansas R at Las Animas	-	●	-		-	●	-	●	-		-		51	4
Arkansas R at Lamar	-	●	-		-	●	-	-					41	
Arkansas R nr Coolidge, KS					●	●	●	-	○				44	
Cache La Poudre R nr Greeley						●							19	
Big Thompson R nr Loveland						●								
Big Thompson R nr Mouth							●	○					30	
Little Thompson R nr Milliken						○	●	●					35	
St Vrain Cr blw Longmont						●	●	○					34	
Boulder Cr at Bldr-Weld Cos		●											25	
Fountain Cr blw Colorado Springs					●								23	
Fountain Cr at Pueblo												●	37	
Fountain Cr nr Manitou								●					28	
Eagle R at Gypsum						○							16	
Roaring Fork R at Mouth						●							17	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 3. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Turbidity Continued														
Gunnison R nr Delta				●										
Gunnison R nr Grand Jct				●	●	●			○	○			57	3
N Fork Gunnison blw Hotchkiss				●										
Uncompahgre R at Ridgway					●									
Uncompahgre R at Delta				●	●					●			53	
Dolores R at Gateway				●										
Dolores R abv San Miguel	○	●		●	●	-		-				-	41	
San Miguel R nr Norwood					●									
San Miguel R at Uravan				●		●							22	
San Miguel R blw Uravan				○	○	○							20	
San Miguel R at Mouth				●	●								32	
White R blw Piceance Cr				●										
White R at Rangely				●										
White R nr Watson, UT				●			●							
Yampa R nr Maybell				●									20	
Yampa R abv Lily		●		●										
Yampa R blw Little Snake R				●										
Little Snake R nr Lily			●	●	●	●							50	
San Juan R abv Navajo Res.				○										
San Juan R nr state line	-	●	-	-	-	●	-	●	-		-	-		
Animas R nr Bondad						●								
La Plata R nr La Plata				●		●								
Mancos R nr CO-UT line				●		●								
Total Dissolved Solids (TDS)														
S Platte R nr Kersey						●								
S Platte R nr Weldona											○		40	
S Platte R blw Sterling			○					○		○				
St Platte R nr Julesburg	○	○	○	○	○	○	○	○	○	○	○	○	50	
Arkansas R nr La Junta				●					○			○	39	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels - Insufficient data

Table 3. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Total Dissolved Solids Continued														
Arkansas R at Las Animas		●		●						●		●	62	5
Arkansas R blw John Martin	●	●	●	●	●			●	●	●	●		67	3
Arkansas R at Lamar	●		●	●	●			●	●				63	1
Arkansas R nr Coolidge, KS	●	●	●	●	●	●	●	●	●	●	●	●	79	2
Cache La Poudre nr Ft. Collins									○	○	○			
Big Thompson R nr Mouth	○	○	○	○	○				○		○	○	47	
Little Thompson R nr Berthoud		○								○				
Little Thompson R nr Milliken	●	●	●							●	●		55	6
St Vrain Cr at Mouth										○			31	
Fountain Cr nr Pueblo				○		○		○		○			49	
Uncompahgre R at Delta	○	●			●					○	○		52	
Dolores R abv San Miguel R	●	●					●	●		●	●		67	4
Dolores R at Gateway		○								●				
San Miguel R blw Uravan									○				29	
San Miguel R at Mouth										○			31	
Mancos R nr CO-NM line										○				
Suspended Sediment														
S Platte R nr Weldona					●	●							39	
S Platte R at Julesburg			●			●						○	35	
Colorado R at Loma				●		●			○				44	
Colorado R nr CO-UT Line	●		●	●	●	●	●	○	●		○		58	1
Arkansas R at Canon City							○							
Arkansas R nr Portland					●	●	●	●					31	
Arkansas R at Hepesta							●						26	
Arkansas R nr La Junta		●	●			●	●	●	●				66	3
Arkansas R at Las Animas		●				●		●					47	
Arkansas R at Lamar		●											33	
Arkansas R nr Coolidge, KS						●	●						32	
Cache La Poudre R nr Greeley						●							17	
Big Thompson R nr Mouth						○	●	○					27	

X Minor exceedance of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 3. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Suspended Sediment Continued														
Little Thompson R nr Milliken						●	●						35	
St. Vrain Cr blw Longmont						○	●	●					31	
Boulder Cr at Boulder-Weld Cos		○											15	
Fountain Cr at Manitou Springs								●					24	
Fountain Cr blw Colorado Springs									●				19	
Fountain Cr at Pueblo		○										●	27	
Eagle R at Gypsum			●										17	
Gunnison R nr Grand Jct				●	○	●							45	
White R blw Meeker									●				23	
White R abv Rangely	○	●	●	●	●	●			○				58	
White R nr Watson, UT	○		●			●	●						64	4
Little Snake R nr Lily	○	○	●	●	●	●	○	○	●	○			68	2
Uncompahgre R at Delta				●						●			40	
Dolores R abv San Miguel R				●	●								32	
San Miguel R at Uravan				●		○							18	
San Miguel R at Mouth					●								15	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels   ● Above critical levels   – Insufficient data

Table 3 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

Reproduced from best available copy.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Trace Metals														
S Platte R abv Littleton						CN 20								
S Platte R at Henderson		CN 28						CN 29		CN 21				
S Platte R nr Julesburg												CN 20		
Colorado R nr Loma								Zn 31						
Arkansas R blw Leadville		Zn 32		Zn 27						Zn 31				
Arkansas R nr Canon City						Cd 51								
						Zn 33								
Arkansas R nr Pueblo												CN 20		
Arkansas R nr Nepesta												CN 42		
Arkansas R nr La Junta						Cu 30								
Arkansas R at Las Animas												CN 20		
Arkansas R at Lamar												CN 20		
Arkansas R nr Coolidge, KS												CN 20		
Conejos R nr Mogote				CN 47										
Big Thompson R nr Loveland						Zn 27								
Clear Cr abv Golden	Pb 78													
Fountain Cr nr Manitou								Pb 56		CN 20		CN 20		
Fountain Cr blw Colorado Springs				CN 25		CN 22				CN 21		CN 22		
Fountain Cr at Pueblo		Zn 20										Cd 100		
Eagle R at Edwards				Zn 33										
Gunnison R nr Delta										CN 22				
Gunnison R nr Gunnison												CN 20		
Uncompahgre R at Ridgway					Cu 78									
					Pb 33									
					Zn 21									
Uncompahgre R at Delta										CN 20				

Table 4. WATER QUALITY TREND TABLE - COLORADO Stations and Parameters where Significant Statistical Differences were Observed

STATION	TEMPERATURE	DISSOLVED OXYGEN	pH	BACTERIA	NITROGEN	PHOSPHOROUS	TURBIDITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	AMMONIA	METALS
South Platte at Littleton				D				I			
South Platte @ 60th Ave.		D		D*		I*	I*				
South Platte @ 88th Ave.		D*		D*		D*	I				
South Platte @ Henderson									I		D_{Cr}
South Platte nr Kersey		D									
South Platte nr Weldona								I*			
South Platte @ Julesburg								D*			
Colorado R. @ New Castle					I						
Colorado R. nr Loma				D*							
Arkansas R. nr Nepesta			D					D			I_{Zn}
Arkansas R. nr La Junta						I					
Arkansas R. blw John Martin								D*			
Arkansas R. @ Lamar								D*			
Arkansas R. nr Coolidge, Kans.				D*							
Rio Grande R. E. of Manassa			D		I						
North Platte R. nr Northgate						D					
Cache La Poudre @ Mouth of Can.			D					I			
Cache La Poudre @ Ft. Collins			I			D*					
Cache La Poudre nr Greeley			I			I*					
Big Thompson R. @ Mouth						I*					

LEGEND

I Improving Trend

D Degrading Trend

* Parameter Concentrations are at critical levels

Table 5. Ranking of Critical Water Quality Stations by Pollutant Group

			WQI*
Phosphorus			
	1.	Powder R at Moorhead	58
	2.	Milk R at Nashua	36
	3.	Pumpkin Cr nr Miles City	35
	4.	Yellowstone R nr Terry	31
Turbidity			
	1.	Powder R at Moorhead	86
	2.	Rosebud Cr at Mouth	61
	3.	Pumpkin Cr nr Miles City	59
	4.	Rosebud Cr nr Colstrip	58
	5.	Yellowstone R nr Terry	54
Dissolved Solids			
	1.	Mizpah Cr at Olive	92
	2.	E Fork Armells Cr nr Colstrip	84
	3.	Pumpkin Cr nr Loesch	78
	4.	Armells Cr nr Forsyth	71
	5.	Redwater R at Circle	65
	6.	Hanging Woman Cr nr Birney	59
Suspended Sediment			
	1.	Powder R at Moorhead	87
	2.	Missouri R nr Culbertson	83
	3.	Musselshell R at Mosby	72
	4.	Tongue R at Miles City	66
	5.	Prairie Elk Cr nr Oswego	63
	6.	Milk R at Nashua	62
Trace Elements			
	1.	Redwater R at Vida	As=100

* Average annual water quality indicator (WQI) value. A range from 20 to 60 signifies exceedence of water quality standards/criteria and the WQI greater than 60 represents exceedences of a severe nature.

Table 6. STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Montana

Reproduced from best available copy.

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 06054500											
MISSOURI RIVER AT TOSTON, MT.	37	37	37	12	12	24	12	61	8	12	56
21MTHDHQ 304110											
MISSOURI R BL TOWNSEND MT											
112WRD 06090800											
MISSOURI RIVER AT FORT BENTON, M											
112WRD 06109500											
MISSOURI RIVER AT VIRGELLE, MT.	36	36	36	12	12	24	12	60	9	12	55
121MBRCF 293007											
MISSOURI R NEAR ZORTMAN	4		4		5	5	3	3	3	5	8
121MBRCF 293003											
MISSOURI RIVER @ FT PECK	4		4			1				3	4
112WRD 06132000											
MISSOURI RIVER BELOW FORT PECK D	36	36	36	12	12	23	12	58	7	12	56
112WRD . 06177000											
MISSOURI RIVER NEAR WOLF POINT,											
112WRD 06185500											
MISSOURI RIVER NEAR CULBERTSON,	36	35	36	11	12	24	12	60	6	12	70
112WRD 06191500											
YELLOWSTONE RIVER AT CORWIN SPRI											
112WRD 06192500											
YELLOWSTONE RIVER NEAR LIVINGSTO	11		12			30		21			
112WRD 06214050											
CLARKS FORK YELLOWSTONE RIVER NE											
112WRD 06214100											
YELLOWSTONE RIVER NEAR LAUREL, M											
112WRD 06214500											
YELLOWSTONE RIVER AT BILLINGS MT	42	37	37	11	12	24	17	62	13	12	56
112WRD 06217500											
YELLOWSTONE RIVER AT HUNTLEY, MT	24	24	24	24	24	24	24	60	33	24	14
112WRD 06218000											
YELLOWSTONE RIVER AT CUSTER, MT.											
112WRD 06294840											
YELLOWSTONE RIVER AT MYERS, MT.											
112WRD 06295000											
YELLOWSTONE RIVER AT FORSYTH, MT	26	12	12	12	12	12	9	24	20	12	14
112WRD 06296120											
YELLOWSTONE RIVER NEAR MILES CIT	25	25	25	24	25	25	25	61	34	25	14
112WRD 06326530											
YELLOWSTONE RIVER NEAR TERRY, MT	14	14	14		14	14	11	28	11	14	14
121MBRCF 293000											
YELLOWSTONE R NEAR SIDNEY											
112WRD 06329500											
YELLOWSTONE RIVER NEAR SIDNEY, M	62	47	47	22	24	35	31	82	47	23	70
111ONET 290055											
YELLOWSTONE RIVER AT SIDNEY	42		41					34			
112WRD 06287000											
BIGHORN RIVER NEAR ST. XAVIER, M	12		12			30		22			
112WRD 06288500											
BIGHORN RIVER NEAR HARDIN, MT.											

Table 6 (continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Montana

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
1110MET 299104											
BIG HORN RIVER AT HARDIN 112WRD 06294700											
BIGHORN RIVER AT BIGHORN, MT. 112WRD 12323800	37	37	37	12	13	26	13	63	10	13	70
CLARK FORK NEAR GALEN, MT. 112WRD 12324200											
CLARK FORK AT DEER LODGE, MT. 1119C050 293005											
CLARK FORK ABOVE MISSOULA 112WRD 12340500											
CLARK FORK ABOVE MISSOULA, MT. 1119C050 293003											
CLARK FORK NEAR ALBERTON MONTANA 1119C050 293002											
CLARK FORK AT PLAINS MONTANA 112WRD 12389000											
CLARK FORK NEAR PLAINS, MT. 112WRD 12391000											
CLARK FORK AT THOMPSON FALLS, MT 112WRD 06324500											
POWDER RIVER AT MOORHEAD, MT. 112WRD 06308160	17	12	14		14	16	9	30	10	14	
PUMPKIN CREEK NEAR LOESCH, MT. 112WRD 06308170	9	9	9		9	9	8	18	8	9	14
LITTLE PUMPKIN CREEK NEAR VOLBOR 112WRD 06308190											
PUMPKIN CREEK NEAR VOLBORG, MT. 112WRD 06308400											
PUMPKIN CREEK NEAR MILES CITY MT 112WRD 06326050	12	10	12		13	14	8	25	8	12	21
MIZPAH CREEK AT OLIVE, MT. 112WRD 06326200	10	8	10		10	12	6	22	6	10	18
MIZPAH CREEK NEAR VOLBORG, MT. 112WRD 06329200	2		2		2	4		6		2	
BURNS CREEK NEAR SAVAGE, MT. 112WRD 06178000	12	12	12		12	12	9	24	9	12	49
POPLAR RIVER AT INTERNATIONAL BO 112WRD 06178150	11	11	11	7	11	33	11	22	7	11	49
POPLAR RIVER NEAR SCOBEY 112WRD 06179000	11	11	11	6	11	33	11	22	6	11	49
EAST FORK POPLAR RIVER NEAR SCOB 112WRD 06179200	11	11	11	6	11	33	11	22	7	11	49
POPLAR RIVER ABOVE WEST FORK NEA 112WRD 06179500	11	11	11	8	11	33	11	22	7	11	49
WEST FORK POPLAR RIVER AT INTERN 112WRD 06180200	9	8	8	3	9	25	9	18	5	9	49
WEST FORK POPLAR RIVER NEAR FOUR 112WRD 12355500											
N F FLATHEAD RIVER NEAR COLUMBIA	12	8	8	8	8	16	8	24	10	16	42

Table 6 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Montana

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 12302055											
FISHER RIVER NEAR LIBBY, MT.											
112WRD 12303400											
ROSS CREEK NEAR TROY MT	3	3	3		3	4	3	6	3	3	42
112WRD 12303430											
STANLEY CREEK NEAR TROY MT	3	3	3		3	4	3	6	3	3	42
112WRD 12303490											
LAKE CREEK NEAR TROY MT	3	3	3		3	4	3	6	3	3	42
112WRD 06016000											
BEAVERHEAD RIVER AT BARRETTS, MT	9		9			25		18			
112WRD 06018500											
BEAVERHEAD RIVER NEAR TWIN BRIDG	11		11			27		21			
112WRD 06088300											
MUDDY CREEK NEAR VAUGHN, MT.	15		12			30		22	3		
112WRD 06088500											
MUDDY CREEK AT VAUGHN, MT.	15		12			30		22	3		
112WRD 06080900											
SUN RIVER BL DIVERSION DAM, NEAR	9		9			23		16			
112WRD 06089000											
SUN RIVER NEAR VAUGHN, MT.	12		12			28		22			
112WRD 06130500											
MUSSELSHELL RIVER AT MOSBY, MT.	37	37	37	13	12	24	12	61	9	12	56
112WRD 06172310											
MILK RIVER AT TAMPICO, MT.											
112WRD 06174500											
MILK RIVER AT NASHUA, MT.	36	36	36	12	12	24	12	60	9	12	56
112WRD 06154400											
PEOPLES CREEK NEAR HAYS, MT.											
112WRD 06175540											
PRAIRIE ELK CREEK NEAR OSWEGO MT	11	11	11		11	11	8	20	8	11	28
112WRD 06177500											
REDWATER RIVER AT CIRCLE, MT.	11	11	11		11	11	8	21	8	11	28
112WRD 06177825											
REDWATER RIVER NEAR VIDA, MT.	10	10	10		9	10	7	20	7	9	49
112WRD 06137570											
BOXELDER CREEK NEAR ROCKY BOY MT	10	10	10	10	10	10	9	20	9	10	42
112WRD 06217750											
FLY CREEK AT POMPEYS PILLAR, MT.	12		12			32		23			
112WRD 06288200											
BEAUVAIS CREEK NEAR ST. XAVIER,	7	7	7	7	7	7		21	7		7
112WRD 06294000											
LITTLE BIGHORN RIVER NEAR HARDIN	12		11			30		20			
112WRD 06294940											
SARPY CREEK NEAR HYSHAM, MT.	10	8	10		10	12	6	22	6	10	27
112WRD 06294980											
EAST FORK ARMELLS CREEK NEAR COL	8	8	8		8	8	6	16	6	8	21
112WRD 06294991											
WEST FORK ARMELLS CREEK NEAR FOR											
112WRD 06294995											
ARMELLS CREEK NEAR FORSYTH, MT.	11	9	11		11	13	7	24	7	11	18

Table 6 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for 1978 - Montana

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 06295250 ROSEBUD CREEK NEAR COLSTRIP, MT.	9	9	9		8	8	7	17	7	8	28
112WRD 06295400 ROSEBUD CREEK ABOVE PONY CREEK,											
112WRD 06295500 ROSEBUD CREEK NEAR ROSEBUD, MT.											
112WRD 06296003 ROSEBUD CREEK AT MOUTH, NEAR ROS	11	9	11		11	13	7	24	7	11	25
112WRD 06306300 TONGUE RIVER AT STATE LINE NR DE	14	11	13	12	25	14	12	28	12	13	28
112WRD 06307500 TONGUE RIVER AT TONGUE R DAM, NE	11	9	11		11	13	7	24	7	11	37
112WRD 06307600 HANGING WOMAN CREEK NEAR BIRNEY,	9	9	9		9	9	7	18	7	9	14
112WRD 06307610 TONGUE RIVER BL HANGING WOMAN C.	12	12	12		12	12	9	24	9	12	14
112WRD 06307830 TONGUE R BL BRANDENBERG BRIDGE,	11	9	9		9	9	7	17	12	9	21
112WRD 06308500 TONGUE RIVER AT MILES CITY, MT.	39	36	36	12	13	26	13	62	11	13	70
112WRD 06307740 OTTER CREEK AT ASHLAND, MT.	9	9	9		9	9	7	18	7	9	14

Table 7 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Dissolved Oxygen														
Pumpkin Cr nr Loesch								X				X		
Pumpkin Cr nr Miles City							X							
Mizpah Cr at Olive							X	X				X		
W FK Poplar R at Intl Bdry							X							
Fecal Coliform Bacteria														
Yellowstone R at Huntley									●	○	○		30	
Yellowstone R at Forsyth									○				15	
Musselshell R at Mosby						○							14	
Milk R at Nashua				○									16	
Boxelder Cr nr Rocky Boy		○											17	
Beauvais Cr nr St. Xavier									○				21	
Tongue R at WY-MT line					○								20	
Tongue R at Miles City						○							11	
Phosphorus														
Missouri R at Virgelle			●										20	
Missouri R nr Culbertson				●	○				●				28	
Yellowstone R at Forsyth					○								15	
Yellowstone R nr Miles City					○								20	
Yellowstone R nr Terry			●		●	○	●						31	4
Yellowstone R nr Sidney			●		●	○							29	
Big Horn at Big Horn					●									
Powder R at Moorhead			●		●	●	●	●					58	1
Pumpkin Cr nr Miles City			●				●		○				35	3
W FK Poplar R at Intl Bdry			○											
Musselshell R at Mosby			●		○	●			●				33	
Milk R at Nashua			●	○					●				36	2
Prairie Elk Cr nr Oswego			●		●				●				33	
Redwater R at Circle			●										12	
Boxelder Cr nr Rocky Boy			○										23	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 7 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Phosphorus Continued														
Redwater R nr Vida			○										12	
Beauvais Cr nr St. Xavier									●					
Armells Cr nr Forsyth			○										16	
Rosebud Cr nr Colstrip			○		●								31	
Rosebud Cr at Mouth			●	○	●								32	
Tongue R at Miles City			●		●				●				27	
Otter Cr at Ashland			●										19	
Turbidity														
Missouri R at Virgelle			●										31	
Missouri R nr Culbertson				●	●	○							37	
Yellowstone R at Billings			○		○								17	
Yellowstone R at Huntley									○				16	
Yellowstone R at Forsyth			●	○	●								33	
Yellowstone R nr Miles City					●								20	
Yellowstone R nr Terry			●	●	●	●	●						54	5
Yellowstone R nr Sidney			●	●	●	●	○		○				44	
Big Horn R at Big Horn			●		●	○							30	
Powder R at Moorehead	●		●	●	●	●	●	●					86	1
Pumpkin Cr nr Miles City			●				●		●				59	3
Poplar R nr Scobey									●				15	
W FK Poplar R at Intl Bdry			●										10	
Musselshell R at Mosby			●	○	●	●	●		●				47	
Milk R at Nashau			●	●	●		○		●				43	
Prairie Elk Cr nr Oswego			●		●				●				51	6
Redwater R at Circle			●										21	
Redwater R nr Vida			●										29	
Sarpy Cr nr Hysham			○										31	
Armells Cr nr Forsyth			●		●								44	
Rosebud Cr nr Colstrip			○	●	●	○							58	4

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 7 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Turbidity Continued														
Rosebud Cr abv Pony Cr.				●	●	●	●							
Rosebud Cr nr Rosebud		○		●	●	●	●	●						
Rosebud Cr at Mouth			●	●	●								61	2
Hanging Woman Cr nr Birney			●		●								26	
Tongue R blw Hanging Woman Cr						○							18	
Tongue R blw Brandenberg Br					●	●							35	
Tongue R at Miles City			●	●	●								47	
Otter Cr at Ashland			●		○								34	
Total Dissolved Solids (TDS)														
Powder R at Moorhead	○	○		○				○	○	○		○	43	
Pumpkin Cr nr Loesch				●	●	●	●	●	●			●	78	3
Pumpkin Cr nr Miles City									○				43	
Mizpah Cr at Olive				●	●	●	●	●	●		●	●	92	1
Mizpah Cr nr Volborg								○		●				
Burns Cr nr Sage					○								36	
E FK Poplar R nr Scobey	○												33	
Poplar R above W Fork	○												31	
Muddy Cr nr Vaughn				○									27	
Musselshell R at Mosby	●	●		○					○	○	○	○	45	
Milk R at Nashua	○												27	
Prairie Elk Cr nr Oswego					○				○		○	○	44	
Redwater R at Circle	●			●	●			●	●	●	●	●	65	5
Redwater R nr Vida				○	○	●		○	○	●	●	●	53	
Fly Cr at Pomeys Pillar	●	○	●	●	○	●			○				52	
Sarpy Cr nr Hysham		○		●	○	●				○		○	56	
E FK Armells Cr nr Colstrip		●	●	●	●	●	●			●		●	34	2
W FK Armells Cr nr Forsyth				●	○	●			●	●		●		
Hanging Woman Cr nr Birney		○		●	○	●			●		●	●	59	6
Armells Cr nr Forsyth								●		●			71	4
Otter Cr at Ashland		●		●		●			○	●		●	53	
Beavais Cr at St. Xavier		○											35	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 7 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Suspended Sediment														
Missouri R at Toston		○	○										23	
Missouri R at Virgelle			●										29	
Missouri R blw Fort Peck Dam			●										19	
Missouri R nr Culbertson				●	●	●	○	●	●				83	2
Yellowstone R at Billings					●								32	
Yellowstone R at Forsyth			●		●	●			○				44	
Yellowstone R nr Miles City						●							22	
Yellowstone R nr Terry			●	●	●	●	●						59	
Yellowstone R nr Sidney			●	○	●	●	○		○				41	
Big Horn R at Big Horn			●	○	●	●	●						48	
Powder R at Moorhead	●		●	●	●	●	●	●	●				87	1
Pumpkin Cr nr Miles City			●				●		●				58	
Muddy Cr nr Vaughn			●				●							
Musselshell R at Mosby			●	○	●	●	●	○	●				72	3
Milk R at Neshau			●	●	●				●				62	6
Prairie Elk Cr nr Oswego	○		●		●				●				63	5
Redwater R at Circle			●										40	
Redwater R nr Vida			●										41	
Beauvais Cr nr St. Xavier		●	○			●			●				57	
Sarpy Cr nr Hysham			○										34	
Armells Cr nr Forsyth			○		●	●							49	
Rosebud Cr nr Colstrip			○	●	●	●							59	
Rosebud Cr at Mouth			●	●	●	○							62	
Hanging Woman Cr nr Birney					○	○							25	
Tongue R blw Brandenberg			○		●	●							45	
Tongue R at Miles City			●	○	●	●			●				66	4
Otter Cr at Ashland			○		○								38	
Nitrate														
Prairie Elk Cr nr Oswego					○									

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 7. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Trace Metals														
Missouri R nr Culbertson								Hg 24	Hg 29			Hg 31		
Yellowstone R nr Sidney								Hg 21				Hg 29		
Big Horn R at Big Horn					Hg 22									
Burns Cr nr Savage									Hg 22	Hg 24				
Poplar R nr Scobey									Hg 21			Hg 21		
E FK Poplar R nr Scobey						Hg 21			Hg 21					
Poplar R abv W Fork												Hg 21		
W FK Poplar R at Intl Bdry						Hg 21								
Musselshell R at Mosby			Hg 37											
Prairie Elk Cr nr Oswego						Hg 26				Hg 22				
Redwater R at Circle			Hg 22			Hg 21			Hg 22					
Redwater R at Vida	As 100					Hg 21			Hg 21					
Beauvais Cr nr St. Xavier						Hg 21								
Rosebud Cr at Mouth				Hg 21										
Tongue R at Tongue R Dam				Hg 21										
Tongue R at Miles City					Hg 21									

Table 8. WATER QUALITY TREND TABLE.
Stations and Parameters where Significant Statistical Differences were Observed.

MONTANA

STATION	TEMPERATURE	DISSOLVED OXYGEN	PH	BACTERIA	NITROGEN	PHOSPHOROUS	TURBIDITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	AMMONIA	METALS
Missouri R. @ Toston		D						I			
Missouri R. bl Fort Peck		D	I					D			
Missouri R. nr Culberson		D	I					D			
Yellowstone R. @ Billings		D	D					I	D*		
Yellowstone R. @ Huntley		I		I*							
Yellowstone R. @ Forsyth								D	D*		
Yellowstone R. nr Miles City								D			
Yellowstone R. nr Terry								D			
Yellowstone R. nr Sidney			D					D	D*		
Big Horn R. nr St. Xavier								D			
Big Horn R. at Bighorn		D			D			D	D*		
Muddy Creek nr Vaughn						D					
Sun River nr Vaughn						D					
Musselshell R. @ Mosby		D						I*			
Milk River @ Nashua		D	D					I*			
Red Water R. @ Circle										D*	
Box Elder Cr nr Rocky Bay										D*	
Arnell's Cr nr Forsyth							D*		D*		
Rosebud Cr nr Colstrip					D				D*		
Tongue River @ State Line				D*							
Tongue R. @ Tongue R. Dam							D				
Tongue R. @ Brandenberg Br.							D*		D*		
Tongue R. @ Miles City		D						I	D*		
Hanging Woman Cr nr Birney								D*			
Otter Creek @ Ashland						D*	D*		D*		

LEGEND

I Improving Trend

D Degrading Trend

* Parameter Concentrations are at critical levels

NORTH DAKOTA

Table 9. Ranking of Critical Water Quality Stations by Pollutant Group

			WQI*
Dissolved Oxygen			
	1.	Souris R nr Westhope	28
	2.	Park R on I-29	27
	3.	Souris R at Towner	24
	4.	Souris R nr Sherwood	23
pH			
	1.	Little Muddy Cr blw Cow Cr	15
	2.	Souris R nr Verendrye	14
Fecal Coliform Bacteria			
	1.	Red R at Fargo	49
Phosphorus			
	1.	Red R blw Fargo	61
	2.	Red R nr Perley	59
	3.	Red R nr Oslo	54
Turbidity			
	1.	Missouri R nr Williston	70
	2.	Little Missouri R nr Watford	59
	3.	Cedar Cr nr Raleigh	51
Suspended Sediment			
	1.	Little Missouri nr Watford	89
	2.	Missouri R nr Williston	63
Trace Elements			
	1.	Red R at Emerson, Manitoba	CN=100
	2.	Little Missouri R nr Watford	Cu=100 Hg= 58 Cr= 68 Zn= 65
	3.	Heart R at Mandan	CN=100

* Average annual water quality indicator (WQI) value. A range from 20 to 60 signifies exceedence of water quality standards/criteria and the WQI greater than 60 represents exceedences of a severe nature.

Table 10. STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - North Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	BIO	METALS
121MRRCE 170005 MISSOURI RIVER NEAR WILLISTON ND					1	1				1	
21NDHDWQ 380053 MISSOURI R, SOUTH OF WILLISTON	1	1	1		1	2		1			
112WRD 06330000 MISSOURI RIVER NR WILLISTON, ND	12	12	12	4	19	12	6	36	8	12	67
121MRRCE 170004 MISSOURI RIVER AT NEWTON ND	44		31		10	28	4	4	4	12	25
121MRRCE 170002 MISSOURI RIVER AT GARRISON DAM											
112WRD 06338490 MISSOURI RIVER AT GARRISON DAM,	12	10	12	11	19	24	9	38		12	85
121MRRCE 170001 MISSOURI RIVER AT WASHBURN ND											
1110NET 170033 MISSOURI RIVER AT BISMARCK											
21NDHDWQ 380028 MISSOURI RIVER AT BISMARCK											
112WRD 06342500 MISSOURI RIVER AT BISMARCK, ND	25	24	25	25	29	25	25	61	25	25	47
112WRD 05114000 SOURIS RIVER NR SHERWOOD, ND	25	24	24	22	30	47	25	59	28	21	28
112WRD 05116000 SOURIS RIVER NR FOXHOLM, ND	20	12	12	12	12	36	12	42	9	12	24
112WRD 05117500 SOURIS RIVER ABOVE MINOT, ND	15		2					19			
21NDHDWQ 380050 SOURIS R, NORTH OF SAWYER											
112WRD 05120000 SOURIS RIVER NR VERENDRYE, ND	20		12			45		42	9	11	14
21NDHDWQ 380018 SOURIS R - TOWNER, ND	10	10	10		10	18		10		10	18
21NDHDWQ 380019 SOURIS R - WESTHOPE, ND											
112WRD 05124000 SOURIS RIVER NR WESTHOPE, ND	24	23	24	23	30	54	24	61	33	21	54
21NDHDWQ 380029 BOIS DE SIOUX R, NEAR FAIRMOUNT											
21NDHDWQ 380001 BOIS DE SIOUX R - WAHPETON, ND	4	4	4		4	8		4		4	12
21MINN BRRR547---10E67 BOISE DE SIOUX R,AT BRECKENRIDGE											
21MINN BRRR-13---10E53 RED RIVER CSAH-19 AT BRUSHVALE	12	12	12	12	12	12		12	12	12	7
112WRD 05051500 RED RIVER OF THE NORTH AT WAHPET	16		2					20			
112WRD 05054000 RED RIVER OF THE NORTH AT FARGO,	18		2					22			
112WRD 05054020 RED RIVER OF THE NORTH BELOW FAR	12	1	12			12		34			7

Table 10 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - North Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21MINN RRRR452---10F71 RED RIVER MAIN & FIRST AT FARGO	12	12	12	12	12	12		12	12	12	6
21NDHDWQ 380002 RED R - FARGO, ND	11	11	8		12	23		12		12	24
21MINN RRRR403---10E67 RED RIVER CSAH-39 W. OF PERLEY	12	12	12	12	12	12		12	12	12	7
21NDHDWQ 380003 RED R - GRAND FORK, ND	10	10	10		10	20		10		8	24
21NDGFFK 000002 RED RIVER OF THE NORTH											
21MINN RRRR296---10E53 RED RIVER AT GRAND FORKS	13	13	13	13	13	13		13	13	13	6
112WRD 05082500 RED RIVER OF THE NORTH AT GRAND	24		3					30			
112WRD 05083500 RED RIVER OF THE NORTH AT OSLO,	1							1			
21NDHDWQ 380004 RED R - DRAYTON, ND											
21NDHDWQ 380005 RED R - PEMBINA, ND	4	4	4		3	8		4		4	12
21MINN RRRR155---10E62 RED R,USH-75 BY EMERSON,MANITOBA											
112WRD 05102490 RED RIVER OF THE NORTH NEAR PEMB											
51MANEPB 000001 EMERSON MANITOBA	3	31H	3	10		26	12	1T	12		72
21NDHDWQ 380014 JAMES R - EDMUNDS, ND											
21NDHDWQ 380013 JAMES R - JAMESTOWN, ND											
21NDHDWQ 380071 JAMES RIVER @ JAMESTOWN	9	9	9		9	17		9		9	12
112WRD 06470500 JAMES RIVER AT LAMOURE, ND	13	11	12			13		36	9		13
21NDHDWQ 380012 JAMES R - LA MOURE, ND											
112WRD 06470830 JAMES RIVER AT OAKES, N. DAK.											
21NDHDWQ 380074 JAMES RIVER WEST OF OAKES	2	2	2		3	6		3		3	12
21NDHDWQ 380008 SHEYENNE R - VALLEY CITY, ND	6	6	6		6	12		6		7	
21NDHDWQ 380076 SHEYENNE RIVER @ HARWOOD	12	11	12		12	24		12		8	24
21NDHDWQ 380015 PIPESTEM R - BUCHANAN, ND	3	3	3		3	5		3		3	12
112WRD 05054500 SHEYENNE RIVER ABOVE HARVEY, ND	16		11			14		38			14
21NDHDWQ 380016 MAPLE R - ELLENDALE, ND	2	2	2		2	3		2		2	6

Table 10 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - North Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21NDHDWO 380034											
MAPLE RIVER WEST OF FARGO N. D.	2	2	2		2	4		2		2	12
21NDHDWO 380017											
ELM R - ELLENDALE, ND	2	2	2		2	4		2		2	6
21NDHDWO 380036											
ELM RIVER NORTHEAST OF GRANDIN	2	2	2		2	4		2		2	6
112WRD 06339490											
ELM CREEK NR GOLDEN VALLEY, ND	17	6	7	6	6	12		31	6	6	27
21NDHDWO 380021											
DELACS R - FOXHOLM, ND	1	1	1		1	2		1		1	
112WRD 05116500											
DES LACS RIVER AT FOXHOLM, ND	16		3					22			
21NDHDWO 380022											
LITTLE MISSOURI R - MEDORA, ND	6	6	6		6	12		6		6	30
112WRD 06337000											
LITTLE MISSOURI RIVER NR WATFORD	13	9	9	8	15	18	11	30	6	9	70
112WRD 06335500											
LITTLE MISSOURI RIVER AT MARMART	14		2					18			
112WRD 06336000											
LITTLE MISSOURI RIVER AT MEDORA,											
21NDHDWO 380024											
HEART R - MANDAN, ND	11	12	12		12	21		12		12	24
21NDHDWO 380062											
HEART RIVER SOUTH OF GLADSTONE	5	5	5		5	10		5		4	12
112W[illegible] 06345500											
HEART RIVER NR RICHARDTON, ND	18		1					21			
112WRD 06348000											
HEART RIVER NR LARK, ND	16		1					20			
112WRD 06349000											
HEART RIVER NR MANDAN, ND	17	12	12	12	20	24	14	41	9	12	83
21NDHDWO 380026											
SQUARE BUTTE CR - CENTER, ND	3	3	3		3	6		3		3	12
112WRD 06342100											
SQUARE BUTTE CREEK TRIBUTARY NO											
112WRD 06342260											
SQUARE BUTTE CREEK BELOW CENTER,	16		2					20			
21NDHDWO 380027											
GOOSE RIVER NEAR HILLSBORO	8	8	8		8	16		8		7	18
21NDHDWO 380030											
ATELOPE CR SOUTH OF ABERCROMBIE	1	1	1		1	2		1		1	6
21NDHDWO 380064											
ANTELOPE CREEK WEST OF CARSON	1	1	1		1	2		1		1	6
21NDHDWO 380031											
WILD RICE R N-WEST - ABERCROMBIE	3	3	3		3	6		3		3	6
21NDHDWO 380033											
BALD HILL CREEK EAST OF DAZEY	2	2	2		2	4		2		2	6
21NDHDWO 380035											
RUSH RIVER NORTHWEST OF HARWOOD	2	2	2		2	4		2		2	6
21NDHDWO 380037											
TURTLE RIVER NORTH OF MANVEL	2	2	2		2	4		2		2	6

Table 10 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - North Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21NDHDWQ 380038											
FOREST RIVER NEAR FORDVILLE N. D 21NDHDWQ 380039	2	2	2		2	4		2		1	6
FOREST RIVER NEAR MINTO N. D. 21NDHDWQ 380040	4	4	4		4	8		3		3	6
FOREST R 8 MILES EAST OF MINTO 21NDHDWQ 380041	7	6	7		7	14		7		6	6
2.8 MI N HOOPLE HWY #18 230100 21NDHDWQ 380069											
SPRING CREEK EAST OF BOWMAN 21NDHDWQ 380073											
COTTONWOOD CREEK @ LAMOURE 21NDHDWQ 380077											
CEDAR CREEK @ RALEIGH N-DAKOTA 112WRD 06352000	2	2	2		2	4		2		2	12
CEDAR CREEK NR HAYNES, ND 112WRD 06352500	15		2					19			
CEDAR CREEK NR PRETTY ROCK, ND 112WRD 06353000											
CEDAR CREEK NR RALEIGH, ND 21NDHDWQ 380042	17		9					17			
PARK RIVER EAST OF HOOPLE N. D. 21NDHDWQ 380043	2	2	2		2	4		2		2	6
PARK RIVER 3 MILES SOUTH HOOPLE 21NDHDWQ 380044	2	2	2		2	4		2		1	6
PARK R 6 MILES EAST OF PARK R. 21NDHDWQ 380045	4	4	4		4	8		3		4	12
PARK RIVER NORTH OF OAKWOOD N D 21NDHDWQ 380046	2	2	2		2	4		2		2	6
PARK RIVER ON I-29 NORTH DAKOTA 21NDHDWQ 380047	9	8	9		9	18		9		8	18
TONGUE RIVER SOUTHWEST PEMBINA 21NDHDWQ 380048	2	2	2		2	4		2		2	6
PEMBINA RIVER SOUTH OF PEMBINA 21NDHDWQ 380051	4	4	4		4	8		4		4	12
WILLOW CREEK WEST OF WILLOW CITY 112WRD 05123400	2	2	2		2	4		2		2	6
WILLOW CREEK NR WILLOW CITY, ND 21NDHDWQ 380052	8		2					12			
DEEP RIVER WEST OF UPHAM 112WRD 05123510											
DEEP RIVER NR UPHAM, ND 21NDHDWQ 380054	6		1					8			
LITTLE MUDDY CR. NE OF WILLISTON 112WRD 06331000	1	1	1		1	2		1			
LITTLE MUDDY RIVER BL COW CREEK 21NDHDWQ 380055	14		10					34			
WHITE EARTH R SOUTH WHITE EARTH 112WRD 06332000											
WHITE EARTH RIVER AT WHITE EARTH	15		2					19			

Table 10 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - North Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21NDHDWQ 380057											
APPLE CREEK ON HWY. 1804 BRIDGE 21NDHDWQ 380058	3	3	3		3	6		3		3	12
BEAVER CREEK SOUTH OF LINTON 21NDHDWQ 380072	3	3	3		3	6		3		3	12
CART CR 2.8 MI N HOOPLE HWY #18 21NDHDWQ 380060	2	2	2		2	3		2		2	6
SPRING CREEK SOUTH OF ZAP 112WRD 06340000											
SPRING CREEK AT ZAP, ND 21NDHDWQ 380061	18	12	11		12	12		40	13	12	55
KNIFE RIVER SOUTH OF HAZEN 112WRD 06339500	1	1	1		1	2		1		1	6
KNIFE RIVER NR GOLDEN VALLEY, ND 112WRD 06339100	17		1					20			
KNIFE RIVER AT MANNING, ND 112WRD 06339300	29	12	11	9	12	24		54	10	12	34
KNIFE RIVER AT MARSHALL, ND 112WRD 06340500	29	11	11	11	12	24		55	8	12	31
KNIFE RIVER AT HAZEN, ND 21NDHDWQ 380063	19	12	12	10	19	24	9	43	9	12	88
GREEN RIVER WEST OF GLADSTONE 21NDHDWQ 380065	3	3	3		3	6		3		3	6
BIG MUDDY CREEK SOUTHEAST ALMONT 21NDHDWQ 380067	3	3	3		3	6		3		3	18
CANNONBALL R SOUTH BREIEN 112WRD 06350000											
CANNONBALL RIVER AT REGENT, ND 112WRD 06351000	30	12	14	10	12	24		57	11	12	33
CANNONBALL RIVER BELOW BENTLEY, 21NDHDWQ 380068	16		2					20			
NORTH FORK GRAND R SOUTH BOWMAN 112WRD 06355000											
NORTH FORK GRAND RIVER AT HALEY, 112WRD 06469500	15		2					19			
PIPESTEM CREEK NEAR BUCHANAN, N.											

Table 11. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
DO														
Souris R nr Sherwood	○	●	○									○	23	4
Souris R nr Foxholm	●	●											20	
Souris R nr Sawyer			●	X			X							
Souris R at Towner		●	●				X						24	3
Souris R nr Westhope	●	●	●				X						28	1
Boise de Sioux R at Breckenridge	X						X							
James R at Jamestown				○									11	
James R at La Moure	●		○											
Sheyenne R at Valley City					●								20	
Elm Cr nr Golden Valley						○	○						16	
Heart R at Mandan			●										12	
Heart R nr Mandan		X											11	
Wild Rice R nr Abercrombie					●									
Forest R nr Minto		●											22	5
Park R on I-29			●					○					27	2
pH														
Souris R nr Verendrye						●							14	
Souris R nr Westhope							X							
James R at La Moure								X						
Little Muddy Cr blw Cow Cr									●				15	
Fecal Coliform Bacteria														
Souris R nr Sawyer	●												23	
Souris R at Towner													17	(a)
Red R at Brushvale		●											17	
Red R blw Fargo			●		●								35	
Red R at Fargo						●	●	●	●	●	●	●	49	
Red R nr Perley	○		●				●						27	
Heart R nr Mandan						○							11	
Goose R nr Hillsboro													34	(a)

(a) WQI values for years 1975-76 indicated problems but no recent data are available for reporting current status.

X Minor exceedance of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

NORTH DAKOTA

Table 11. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Beaver Cr nr Linton	-	-	-	-	●	-	-	-	-	-	-	-		
Knife R at Manning						●							22	
Red R at Grand Forks						○							12	
Nitrate														
Shevenne R at Valley City												●	23	
Little Muddy Cr nr Williston	●													
Cart Cr nr Hoople					○									
Phosphorus														
Missouri R nr Williston				●	○	●							27	
Souris R nr Foxholm	○	●	●			○	●	○	○				45	
Souris R nr Sawyer					○		○	○	●				39	
Souris R nr Verendrye	●		○		○	○	○						47	
Souris R at Towner					●	○							32	
Souris R nr Westhope		●	●				○		○				44	
Bois de Sioux R at Breckenridge	●				○	○	○	○	○	○				
Red R at Brushvale						○	○						30	
Red R blw Fargo	●	●	●		○	○	●	●	●	○	○	○	61	
Red R at Fargo				●		○	●						40	
Red R nr Perley				●	○	●	●	○	○	●		●	59	
Red R at Grand Forks				○	○	●	○			○		○	44	
Red R nr Oslo	●	●	●			○	○	○	○				54	
Red R at Emerson, Mtba				●		○	○						37	
Sheyenne R at Valley City					○								32	
Sheyenne R at Harwood						○							25	
Pipestem R at Buchanan					○									
Maple R at Ellendale				○			○							
Maple R nr Fargo				○										
Elm R at Ellendale				○										
Elm Cr nr Golden Valley	○		○										29	
Little Missouri R at Medora							○							
Little Missouri R nr Watford				●		●	●		●				52	
Heart R at Mandan				○									19	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 11. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Phosphorus Continued														
Heart R nr Mandan				○									17	
Square Butte Cr at Center										●				
Goose R nr Hillsboro								○	●				34	
Antelope Cr nr Abercrombie	-	-		○	-		-	-	-	-	-	-		
Wild Rice R nr Abercrombie	-	-		○			-	-		-	-	-		
Cedar Cr at Raleigh							○							
Park R nr Hoople	-	-	-	-		●	-	-	-	-	-	-		
Park R nr Park River							●							
Park R on I-29						●	●						31	
Tongue R nr Pembina						○								
Deep R nr Upham									○					
Apple Cr on Hwy 1804	-	-	-		○		-	-	-	-	-	-		
Beaver Cr nr Linton	-	-	-		-	-		-	-	○	-	-		
Big Muddy Cr nr Almont					○									
Cannonball R nr Breien			○											
Turbidity														
Missouri R nr Williston				●	●	●	●	○					70	
Missouri R at Bismarck			●										10	
Red R at Oslo						○								
Red R at Emerson, Mtba				●		●	●						35	
Little Missouri R at Medora				○						○				
Little Missouri R nr Watford				●	●		●	●	●				59	
Heart R nr Mandan				●									12	
Cedar Cr at Raleigh							○							
Total Dissolved Solids														
Souris R nr Westhope	○	○											29	
Elm Cr nr Golden Valley	○				○	○	○						42	
Des Lacs R nr Foxholm						○							33	
Little Missouri R nr Watford										○	○	●	40	
Turtle R nr Manvel					●									

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels

● Above critical levels

– Insufficient data

NORTH DAKOTA

Table 11. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Total Dissolved Solids Continued														
Forest R nr Minto								○					31	
Spring Cr nr Bowman				●										
Cedar Cr nr Haynes								○					45	
Cedar Cr nr Raleigh	●	●		○		○	○	○	○	○			51	
Park R on I-29						○	●	●						
Tongue R nr Pembina						○								
Pembina R nr Pembina							●							
Willow Cr nr Willow City						○								
Little Muddy R blw Cow Cr	○	○											40	
Knife R nr Golden Valley	●	○									○	○	40	
Knife R at Marshall	○	○	○			○						○	40	
Big Muddy Cr nr Almont						○								
Cannonball R at Regent	○	○	○		○	○			○			○	46	
Cannonball R blw Bentley	○	○										○	39	
Spring Cr at Zap												○	37	
Knife R nr Manning	○	○											37	
Knife R nr Hazen												○	35	
N Fork Grand R at Haley								○					42	
Little Missouri nr Monarch												○	34	
Suspended Sediment														
Missouri R nr Williston				●	●	●	●		○				63	
Missouri R at Bismarck			●				○						38	
Elm Cr nr Golden Valley			●										27	
Little Missouri nr Watford				●	●	●	●	●	●				89	
Heart R nr Mandan				●		●							30	
Spring Cr at Zap			○										17	
Knife R at Marshall				●					○				30	
Knife R at Hazen				○									19	
Cannonball R at Regent			○										22	

X Minor exceedence of standards (for Temperature, DC, and pH only)

○ At or approaching critical levels

● Above critical levels

– Insufficient data

Table 11. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Suspended Sediment Continued														
Red River at Fargo							●						16	
Red River at Perley						○	●						23	
Red River at Grand Forks						●							23	
Red River at Emerson, Mtba					●	○	○						27	
James R at La Moure					○								33	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels

● Above critical levels

– Insufficient data

Table 11 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Trace Metals														
Missouri R nr Williston										Hg 40				
Missouri R at Newton		Hg 24			Hg 22			Hg 24						
Red R at Brushvale											Hg 28			
Red R at Fargo	CN 31						CN 25			Hg 21				
Red R nr Perley											Hg 21			
Red R at Grand Forks	CN 23				CN 25		CN 22			Hg 21				
Red R nr Emerson, Mtba	Hg 22													
Red R at Emerson, Mtba		CN 100		CN 100	CN 100	CN 100	CN 100	CN 100	CN 100		CN 100	CN 100		
Sheyenne R at Harwood			CN 20			CN 24			CN 31					
Little Missouri R nr Watford		Hg 24				Hg 22			Hg 58					
						Cu 30	Cu 34		Cu 100					
									Cr 68					
									Zn 65					
Heart R at Mandan	CN 22						CN 20			CN 100				
Square Butte Cr at Center					CN 23					CN 37				
Turtle R nr Manvel				CN 38										
Forest R nr Minto							CN 22							
Park R nr Park River	CN 25						CN 23							
Park R on I-29					CN 31		CN 21							
Pembina R nr Pembina	CN 25						CN 25							
Willow Cr nr Willow City					CN [illegible]									
Spring Cr at Zap									hg 27					
Knife R nr Hazen	CN 22													

Table 12. WATER QUALITY TREND TABLE. - NORTH DAKOTA
Stations and Parameters where Significant Statistical Differences were Observed.

STATION	TEMPERATURE	DISSOLVED OXYGEN	PH	BACTERIA	NITROGEN	PHOSPHOROUS	TURBIDITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	AMMONIA	METALS
Missouri River @ Williston								D			
Missouri River @ Newton			I								
Missouri River @ Garrison Dam								D			
Missouri River @ Bismarck							I*	D			
Souris River nr Foxholm						D*	I	D	I		
Souris River nr Verendrye						D*					
Souris River @ Towner		I*	I								
Red River @ Fargo			I								
Red River W. of Perley			I	D*							
Red River @ Grand Fork			I			I*					
Sheyenne R. @ Valley City			I								
Sheyenne R. @ Harwood			I								
Little Missouri R. @ Medora			I								
Little Missouri R. @ Watford											I_{Hg}
Heart River @ Mandan			I								
Square Butte Cr. blw Center								D			
Goose River nr Hillsboro			I		I						
Forest R. E. of Minto					I						
Cedar Cr. nr Raleigh								D*			
Park R. on I-29			I								

LEGEND

I Improving Trend

D Degrading Trend

* Parameter Concentrations are at critical levels

Table 13. Ranking of Critical Water Quality Stations by Pollutant Group

Dissolved Oxygen		WQI*
1.	James R nr Stratford	35
2.	James R blw Mitchell	27
3.	Big Sioux R abv Waterton	26
pH		
1.	White R nr Oacoma	18
2.	Big Sioux R at Sioux Falls	10
3.	Cheyenne R at Plainview	10
Fecal Coliform Bacteria		
1.	Whitewood Cr at Pluma	100
2.	Whitewood Cr at Deadwood	100
3.	Whitewood Cr nr Whitewood	44
4.	White R nr Oacoma	42
5.	Ponca Cr nr St Charles	38
6.	Big Sioux R nr Alcester	35
Nitrogen		
1.	Belle Fourche R nr Sturgis	53
2.	Belle Fourche R nr Elm Springs	45
3.	Whitewood Cr at Pluma	43
Phosphorus		
1.	Big Sioux R at Sioux Falls	96
2.	Big Sioux R at Canton	91
3.	Big Sioux R at Brandon	100
4.	Big Sioux R nr Alcester	88
5.	Big Sioux R nr Hudson	93
6.	Boxelder Cr at New Underwood	89
Turbidity		
1.	White R nr Oacoma	82

Table 13 (continued)

Ranking of Critical Water Quality Stations by Pollutant Group

Total Dissolved Solids	WQI*
1. Cheyenne R at Edgemont	66
2. N Fork Grand R nr Shadehill	65
3. Belle Fourche R nr Sturgis	54
4. Cheyenne R nr Buffalo Gap	53
5. Cheyenne R nr Plainview	47
Suspended Sediment	
1. White R nr Oacoma	93
2. Belle Fourche R nr Elm Springs	91
3. Grand R at Little Eagle	72
4. White R nr Kadoka	69
5. Little White R nr White River	59
6. Bad R nr Ft Pierre	53

* Average annual water quality indicator (WQI) value. A range from 20 to 60 signifies exceedence of water quality standards/criteria and the WQI greater than 60 represents exceedences of a severe nature.

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Table 14. STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - South Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21SDAK01 460671											
MISSOURI RIVER AT OAHE DAM 121MBRCE 460008	23	13	10	13	13	13		26	13	13	
POWERHOUSE OUTFLOW AT OAHE 112WRD 06440000	7		7	4							5
MISSOURI R AT PIERRE SD 21SDAK01 460672	27	27	13	11	13	46	13	37	4	13	56
MISSOURI RIVER AT BIG BEND DAM 121MBRCE 460005	10	6	3	6	6	6		12	6	6	
POWERHOUSE OUTFLOW AT BIG BEND 1110NET 460032	5		5		3	6		3	4	3	14
MISSOURI RIVER AT YANKTON 121MBRCE 460029											
MO R @ DAM ABOVE YANKTON, SD 21SDAK01 460673											
MISSOURI R. AT FORT RANDALL DAM 21SDAK01 460674	9	5	3	5	5	5		10	5	5	
MISSOURI R. AT GAVINS POINT DAM 112WRD 06395000											
CHEYENNE RIVER AT EDGEMONT,S.D. 21SDAK01 460875	11	1	1		1	5	1	11		2	
CHEYENNE R AT EDGEMONT 112WRD 06401500	19	10	10	10	10	11		22	11	11	
CHEYENNE R BELOW ANGOSTURA DAM S 112WRD 06402600	9		9			36		18			
CHEYENNE R NEAR BUFFALO GAP SD 21SDAK01 460656	12		12			48		23			
CHEYENNE RIVER 112WRD 06423500											
CHEYENNE R NEAR WASTA SD 21SDAK01 460865	9							9			
CHEYENNE R NEAR WASTA 21SDAK01 468860	21	12	11	12	10	12		24	12	12	
CHEYENNE RIVER SE OF PLAINVIEW 121MBRCE 460010	22	13	11	13	10	13		26	13	13	
CHEYENNE RIVER NEAR EAGLE BUTTE 112WRD 06439500	7		7	4							5
CHEYENNE R NEAR EAGLE BUTTE SD 21SDAK01 460655	10		10			39		20			
BIG SIOUX RIVER ABOVE WATERTOWN 21SDAK01 460740	19	11	8	11	11	11		22	11	11	
BIG SIOUX NEAR WATERTOWN 21SDAK01 460662	25	14	11	14	14	14		28	14	14	
BIG SIOUX RIVER CEMETARY ROAD 112WRD 06480000	21	12	9	12	11	12		24	12	12	
BIG SIOUX RIVER NEAR BROOKINGS S 21SDAK01 460702	12							12			
BIG SIOUX RIVER NEAR BROOKINGS 21SDAK01 460663	21	12	9	12	11	12		24	12	12	
BIG SIOUX EAST OF EGAN ON SD 34											

Table 14 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - South Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	PHI	METALS
21SDAK01 460664											
BIG SIOUX RIVER IN SIOUX FALLS 21SDAK01 460703	25	14	14	14	11	14		28	13	14	
BIG SIOUX RIVER NEAR DELL RAPIDS 112WRD 06481000	21	17	12	10	11	12		24	12	12	
BIG SIOUX R NEAR DELL RAPIDS SD 1110NET 460080	22	19	22	17	22	55	22	54	30	22	53
BIG SIOUX RIVER BLW SIOUX FALLS 112WRD 06482020											
BIG SIOUX R AT NORTH CLIFF AVE A 112WRD 06482100	22	19	22	17	22	22	22	47	22	22	51
BIG SIOUX RIVER NEAR BRANDON, S. 21SDAK01 460831											
BIG SIOUX RIVER AT BRANDON S DAK 21SDAK01 460665	26	14	14	14	14	13		27	14	13	
BIG SIOUX RIVER EAST OF CANTON 21SDAK01 460666	21	12	12	12	10	12		24	12	12	
BIG SIOUX RIVER EAST OF HUDSON 21SDAK01 460667	21	12	12	11	10	12		24	12	12	
BIG SIOUX RIVER SE OF ALCESTER 21SDAK01 460832	21	12	12	11	10	12		24	12	12	
BIG SIOUX RIVER NEAR RICHLAND SD 112WRD 06482875	23	13	13	13	11	13		26	13	13	
BIG SIOUX RIVER NR HUDSON, SOUTH 21SDAK01 460805											
JAMES RIVER NEAR HECLA 21SDAK01 460734	16	9	6	9	9	9		18	9	9	
JAMES RIVER NEAR STRATFORD 112WRD 06471000	14	8	5	8	8	8		16	8	8	
JAMES R AT COLUMBIA SD 21SDAK01 460733	7		8			32		16			
JAMES RIVER AT COLUMBIA 21SDAK01 460735											
JAMES RIVER ABOVE HURON 112WRD 06476000	21	12	5	12	12	12		24	12	12	
JAMES R AT HURON SD 112WRD 06476001	10	1	10			40		20			
JAMES RIVER AT HURON, S. DAK. 112WRD 06476050											
JAMES R @ 21ST BRIDGE @ HURON, S 21SDAK01 460736											
JAMES RIVER BELOW HURON 21SDAK01 460737	1	1	1	1	1	1		2	1	1	
JAMES RIVER ABOVE MITCHELL 21SDAK01 460638	20	11	11	11	10	11		22	10	11	
JAMES RIVER BELOW WOLF CREEK 21SDAK01 460770											
JAMES RIVER NEAR MITCHELL 112WRD 06478000	2	1	1	1	1	1		2	1	1	
JAMES R NR MITCHELL,S,DAK.											

Table 14 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - South Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	BOD	METALS
21SDAK01 460707 JAMES RIVER BELOW MITCHELL	22	11	12	12	10	12		24	11	12	
112WRD 06478500 JAMES R NEAR SCOTLAND SD	24	24	12	11	12	24	12	36	8	12	56
21SDAK01 460760 JAMES RIVER NEAR YANKTON											
21SDAK01 460761 JAMES RIVER NORTH OF YANKTON	21	12	12	12	9	12		24	12	12	
21SDAK01 460755 VERMILLION R NEAR WAKONDA	19	11	11	11	9	10		22	11	11	
21SDAK01 460745 VERMILLION R NEAR VERMILLION	6	3	3	3	2	3		6	2	3	
21SDAK01 460661 VERMILLION RIVER W OF CHANCELLOR	21	12	12	12	10	12		24	12	12	
21SDAK01 460815 KEYA PAHA RIVER NEAR WEWELA	21	12	10	12	10	11		24	12	12	
21SDAK01 460835 WHITE RIVER NEAR KADOKA	25	14	12	14	7	14		28	14	14	
21SDAK01 460825 WHITE RIVER NEAR OACOMA	9	5	3	5	5	4		10	5	5	
21SDAK01 460842 WHITE RIVER NEAR OGLALA	19	11	10	10	8	11		22	11	11	
112WRD 06452000 WHITE R NEAR OACOMA SD	26	27	14	11	12	24	15	36	7	12	56
21SDAK01 460840 LITTLE WHITE R NEAR WHITE R SD	21	12	10	12	6	11		24	12	12	
21SDAK01 460843 LITTLE WHITE RIVER NEAR TUTHILL											
21SDAK01 460905 BATTLE CREEK NEAR KEYSTONE	21	12	11	12	12	12		24	12	12	
21SDAK01 460910 RAPID CREEK NEAR FARMINGDALE	21	12	11	12	11	11		24	12	12	
21SDAK01 460920 RAPID CREEK BELOW PACTOLA RES.											
112WRD 06411500 RAPID CR BELOW PACTOLA DAM SD	11		11			44		22			
112WRD 06421500 RAPID CR NEAR FARMINGDALE SD	17		9			38		27			
21SDAK01 460647 RAPID CREEK NEAR ROCHFORD	21	12	11	12	11	12		24	12	12	
21SDAK01 460669 RAPID CREEK WEST OF RAPID CITY	21	12	11	11	12	12		24	12	12	
21SDAK01 460890 BELLE FOURCHE R NEAR BELLE FOURC	21	11	11	11	10	12		24	11	12	
21SDAK01 460880 BELLE FOURCHE R NEAR STURGIS	21	12	11	12	10	12		24	12	12	
112WRD 06428500 BELLE FOURCHE R AT WY-SD STATE L	20	11	11	11	21	12	11	29	9	9	28
112WRD 06437000 BELLE FOURCHE R NEAR STURGIS SD	12		12			47		24			13

Table 14 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - South Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 06438000											
BELLE FOURCHE R NEAR ELM SPRINGS	21	22	12	11	11	22	11	34	6	11	56
21SDAK01 460676											
BELLE FOURCHE NE OF ELM SPRINGS	21	12	11	10	10	12		24	12	12	
21SDAK01 460900											
SPEARFISH CR IN SPEARFISH,SD	21	12	11	12	12	12		24	12	12	
21SDAK01 460895											
REDWATER R AT BELLE FOURCHE	21	12	11	12	12	12		24	12	12	
21SDAK01 460935											
MOREAU RIVER NEAR WHITEHORSE	5	3	1	3	2	3		6	3	3	
21SDAK01 460039											
MOREAU RIVER NEAR USTA	4	3	2	3	3	3		6	3	3	
112WRD 06357800											
GRAND R AT LITTLE EAGLE SD	23	24	13	9	11	20	10	33	7	10	56
21SDAK01 460677											
N. FORK GRAND R. NEAR SHADEHILL	4	3	2	3	3	3		6	3	3	
21SDAK01 460678											
S. FORK GRAND R. NORTH OF BISON	4	3	2	2	3	3		6	3	3	
21SDAK01 460640											
GRAND RIVER AT SHADEHILL	4	3	2	3	3	3		6	3	3	
21SDAK01 460955											
LITTLE MISSOURI R AT CAMP CROOK	4	2	2	2	2	2		4	2	2	
21SDAK01 460710											
LITTLE MINNESOTA R NEAR PEEVER	21	12	9	12	12	12		24	12	12	
21SDAK01 460700											
WHETSTONE R NEAR BIG STONE CITY	17	10	8	10	10	10		20	10	10	
21SDAK01 460850											
BAD R NEAR FT PIERRE	15	8	7	8	5	8		16	8	8	
21SDAK01 460841											
BAD RIVER AT POWELL											
112WRD 06441500											
BAD R NEAR FORT PIERRE SD	1								1		
21SDAK01 460679											
BOX ELDER CRK AT NEW UNDERWOOD	18	9	8	9	9	9		18	9	9	
21SDAK01 460925											
BOX ELDER CREEK NEAR NEMO	21	12	11	12	12	12		24	12	12	
21SDAK01 460646											
CASTLE CREEK NEAR MYSTIC	22	13	12	13	13	13		26	13	13	
21SDAK01 460650											
GRACE COOLIDGE CREEK	21	12	10	12	11	12		24	12	12	
21SDAK01 460651											
FRENCH CREEK IN CUSTER STATE PK.	21	12	10	12	12	12		24	12	12	
21SDAK01 460653											
FRENCH CREEK NEAR CUSTER	21	12	10	11	12	12		24	12	12	
21SDAK01 460658											
WHITEWOOD CREEK ABOVE HOMESTAKE	21	11	11	12	12	12		24	12	12	
21SDAK01 460659											
WHITEWOOD CREEK AT PLUMA	17	9	9	10	9	10		20	10	10	
21SDAK01 460660											
WHITEWOOD CREEK NE OF DEADWOOD	19	10	10	11	10	11		22	11	11	

Table 14 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - South Dakota

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21SDAK01 460652											
WHITEWOOD CREEK NEAR WHITEWOOD	12	7	6	7	6	7		14	7	7	
21SDAK01 460649											
SPRING CREEK SOUTHWEST OF RAPID	21	12	11	12	12	12		24	12	12	
21SDAK01 460654											
SPRING CREEK AT SHERIDAN LAKE	21	12	11	12	12	12		24	12	12	
21SDAK01 460648											
SPRING CREEK NEAR HILL CITY											
21SDAK01 460657											
FALL RIVER NEAR CONFLUENCE	19	11	10	10	11	11		22	11	11	
21SDAK01 460668											
SIX MILE CRK ABOVE BROOKINGS STP											
21SDAK01 460670											
PONCA CREEK SOUTH OF ST. CHARLES											
21SDAK01 460810											
MAPLE R NEAR FREDERICK											
21SDAK01 460645											
LAC QUI PARLE RIVER AT GARY	4	3	3	3	3	3		6	3	3	
21SDAK01 460844											
LAKE CREEK NEAR TUTHILL											
21SDAK01 460680											
T116N R52W SECTION 9 WILLOW CREEK											
21SDAK01 460675											
0.5 MILES S JUNC U.S. HWY 85 365	7	4	4	3	4	4		8	4	4	
21SDAK01 460680											
T116N R52W SECTION 9 WILLOW CREEK											

Table 15 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.	
Temperature															
Big Sioux R at Brandon								X							
James R nr Yankton						X		X							
Vermillion R nr Wakonda								X							
Vermillion R nr Chancellor								X							
Keya Paha R nr Wewela							X								
Whetstone R nr Big Stone City								X							
Bad R nr Ft. Pierre						X									
Dissolved Oxygen															
Big Sioux R abv Waterton	●					X	○	X	○				26	3	
Big Sioux R nr Waterton		●						X					16		
Big Sioux R nr Brookings	●	○	X									X	19		
Big Sioux R nr Egan															(a)
Big Sioux R nr Canton		X											7		
Big Sioux R nr Hudson		X											8		
Big Sioux R nr Richland		X											9		
James R nr Hecla								X					10		
James R nr Stratford						●	○	●	X				35		
James R abv Huron		X	○										11		
James R abv Mitchell	X		X										10		
James R blw Mitchell	●		●										27	2	
James R nr Scotland		●											11		
James R nr Yankton	●	●											17		
Vermillion R nr Chancellor		X											5		
Belle Fourche R nr Sturgis	X												6		
Six Mile Cr nr Brookings		X				●	●								
pH															
Missouri R at Oahe Dam										X					
Cheyenne R nr Plainview										○			10		

(a) 1977 data indicates problems. No 1978 data.

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels

● Above critical levels

– Insufficient data

Table 15. TABLE OF CRITICAL STATIONS AND PARAMETERS.

SOUTH DAKOTA

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
pH Continued														
Big Sioux R abv Watertown									X				9	
Big Sioux R nr Brookings		X												
Big Sioux R at Sioux Falls		X									X		10	
Big Sioux R nr Richland	X												8	
James R abv Huron		X											7	
James R nr Yankton		X											7	
Vermillion R nr Wakonda		X												
Vermillion R nr Vermillion	X													
Vermillion R nr Chancellor		X												
Keya Paha R nr Wewela		X											8	
White R nr Oacoma		X											18	
Little White R nr White R		X											9	
Little Minnesota R nr Peever		○											8	
Whetstone R nr Big Stone City		X											7	
Rapid Creek nr Farmingdale											●		17	
Fecal Coliform Bacteria														
Cheyenne R at Edgemont						●							17	
Cheyenne R nr Wasta					●								20	
Cheyenne R nr Plainview				●				●					20	
Big Sioux R nr Watertown		●	●				○						32	
Big Sioux R nr Brookings						○							15	
Big Sioux R at Sioux Falls	○					○	○						24	
Big Sioux R at Sioux Falls								●	●		●	●	32	
Big Sioux R at Brandon	○					●		●					32	
Big Sioux R nr Canton						○	●						19	
Big Sioux R nr Hudson						●	●						20	
Big Sioux R nr Alcester						●	●	●					35	7
Big Sioux R nr Richland						●	○					○	23	
James R blw Mitchell			●		●								30	
James R nr Yankton							●						10	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 15 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.	
Fecal Coliform Bacteria Continued															
Vermillion R nr Wakonda						●	●								
Vermillion R nr Vermillion	●					●							23		
Vermillion R nr Chancellor						●	●						25		
White R nr Kadoka							○	○	●				31		
White R nr Oglala							●						19		
White R nr Oacoma				●	●	●		●	●				42	4	
Little White R nr White River				●			●	○	●				30		
Little White R nr Tuthill		●					●								
Belle Fourche R nr Elm Springs					●		○						20		
Belle Fourche R nr Sturgis					●								19		
Grand R at Little Eagle									●				23		
Bad R nr Ft. Pierre					●			●					20		
Bad R at Powell			○												
French Cr nr Custer			●			●							20		
Whitewood Cr at Pluma	-	-	-	●	●	●	●	●	●	●	●	●	100	1	
Whitewood Cr nr Deadwood	-	-	●	●	●	●	●	●	●	●	●	●	100	2	
Whitewood Cr nr Whitewood		●		●			○						44	3	
Fall R at Mouth							○						31		
Six Mile Cr abv Brookings						●									
Ponca Cr nr St. Charles			○	●			○						35	5	
Lac Qui Parle R at Gary															(b)
Strawberry Cr nr Lead	●														
Nitrate															
Cheyenne R nr Plainview		○											23		
Big Sioux R above Watertown			●										14		
Big Sioux R nr Watertown											○	○	18		
Big Sioux R at Brandon								○					22		
Big Sioux R nr Alcester	●	○		○			○				○	○	38		
Big Sioux R nr Richland	○	○		○								○	30		

(b) WQIs for 1975 indicated critical level concentrations for the period Jan-Jun. No 1978 data available Jan-Sep.

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 15 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

SOUTH DAKOTA

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG
Nitrate Continued														
Belle Fourche R nr Elm Springs	●	●	●									●	45	2
Belle Fourche R nr Sturgis	●	○	●								●	●	53	1
Whitewood Cr at Pluma				○			○			○	○		43	3
Whitewood Cr nr Whitewood										○				
Phosphorus														
Cheyenne R nr Buffalo Gap					○								8	
Cheyenne R nr Eagle Butte			●	●	●		●						56	
Big Sioux R nr Waterton						●		●		●	●	●	73	
Big Sioux R nr Brookings	●	●				○		●				○	50	
Big Sioux R nr Dell Rapids	○												29	
Big Sioux R at Sioux Falls	●	●	●	●	●	●	●	●	●	●	●	●	96	1
Big Sioux R at Brandon		●				●	●			●		●	100	3
Big Sioux R at Canton	●			○			●	●	●	●	●	●	91	2
Big Sioux R nr Hudson	●	●						○	●	●	●	●	93	5
Big Sioux R nr Alcester	●	●					●		●	●	●	●	88	4
Big Sioux R nr Richland	●						●			●	●	●	71	
James R nr Hecla								●					38	
James R at Columbia						○	●	●	○				47	
James R nr Stratford						●		●	●			○	73	
James R abv Huron			●			●		●	○			●	70	
James R at Huron			●	●		●						●	65	
James R blw Huron											●			
James R abv Mitchell	●											○	52	
James R blw Mitchell	●											○	56	
James R nr Scotland	●	●		●	●		○						52	
James R nr Yankton	●				●		○						32	
White R nr Oglala			●		●								30	
White R nr Kadoka	○		●			○		●					33	
White R nr Oacoma			●	●	●	●	●	●					62	
Little White R nr White River	●	●	●	●	●	●	●	●					62	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 15. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Phosphorus Continued														
Rapid Cr nr Farmingdale		●	●		●		●	●	○	●	●	●	84	
Belle Fourche at WY-SD Line						●							16	
Belle Fourche R nr Sturgis			●		●								22	
Belle Fourche R nr Elm Springs			○		●	○	●						35	
French Cr nr Custer	○		●	●	○		●	●	●	●			65	
Whitewood Cr at Pluma				●	●		○	●					44	
Whitewood Cr nr Deadwood	●			○		○								
Whitewood Cr nr Whitewood		○												
Fall R at Mouth	○		●		●								42	
Grand R at Little Eagle			●	○									26	
Keya Paha R nr Wewela		○		○									20	
Boxelder Cr at New Underwood	●	●	●	○	●								89	6
Vermillion R nr Wakonda						○	●						32	
Vermillion R nr Vermillion	○													
Vermillion R nr Chancellor							○						12	
Whetstone R nr Big Stone City	●	●	●				○						42	
Little Minnesota R nr Peever			●				○						26	
Turbidity														
Cheyenne R at Edgemont						○								
White R nr Oacoma			●	●	●	●	●	●	●				82	
Belle Fourche R at WY-SD Line			○		●	●							28	
Belle Fourche R nr Elm Springs			○		●	●	●						40	
Grand R at Little Eagle			●	●	●	○	●						34	
Total Dissolved Solids														
Cheyenne R at Edgemont	●	-	●	○	●	○	●	○	●	●	●	●	61	1
Cheyenne R blw Angostura Dam		●		○					○				47	
Cheyenne R nr Buffalo Gap		○		○		○	○	○	○	○		○	53	4
Cheyenne R nr Wasta	○	●		○					○				46	
Cheyenne R nr Plainview	●	●					○		○	○	●	●	47	5

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels - Insufficient data

Table 15. TABLE OF CRITICAL STATIONS AND PARAMETERS.

SOUTH DAKOTA

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Total Dissolved Solids Continued														
Cheyenne R nr Eagle Butte	●	○									○	●	42	
James R abv Huron	○	●											29	
James R abv Mitchell	●		○										31	
James R blw Mitchell	○												26	
James R nr Scotland	○	○											31	
James R nr Yankton	●	○											31	
Vermillion R nr Vermillion	○													
Belle Fourche at WY-SD Line			○		●	●							41	
Belle Fourche R nr Belle Fourche	○	○								○	●	○	43	
Belle Fourche R nr Sturgis	●	●	●		○	○	○		○		●	●	54	3
Belle Fourche R nr Elm Springs	●	●	●							○	●	●	49	
Moreau R nr Usta											○	●	53	
N Fork Grand R nr Shadehill										●	●	●	65	2
N Fork Grand R nr Bison										○	●	●	53	
Bad R nr Ft. Pierre											●		40	
Suspended Sediment														
James R nr Scotland	○	○											37	
James R nr Yankton							○						15	
Big Sioux R abv Watertown	●												10	
Big Sioux R at Brandon			○										15	
Big Sioux R at Canton			○			○							20	
Big Sioux R nr Hudson			○			●	○						28	
Big Sioux R nr Alcester			●			●	●						32	
Big Sioux R nr Richland			○			●	○						35	
White R nr Oglala				●	●	●	●	●					46	
White R nr Kadoka		●	●	●	●	●	●	●	●				69	4
White R nr Oacoma	○		●	●	●	●	●	●					93	1
Little White R nr White River			●	●	○	○	●	●	●				59	5
Belle Fourche R at WY-SD Line			○										10	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 15 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Suspended Sediment Continued														
Belle Fourche R nr Belle Fourche		●	●			○							27	
Belle Fourche R nr Sturgis				●	●	●	●						40	
Belle Fourche R nr Elm Springs			●		●	●	●		●				91	2
Red Water R at Belle Fourche					●								12	
Rapid Cr nr Farmingdale					●	●							22	
Whitewood Cr at Pluma				●	●		○						34	
Whitewood Cr nr Whitewood		●		●										
Fall R at Mouth			●										18	
Grand R at Little Eagle			●	●	●	●	●						72	3
Bad R nr Ft. Pierre			●	●	●			●					53	6
Cheyenne R at Edgemont				●	●	●		●					41	
Keya Paha nr Wewela			●	●									19	
Moreau R nr Whitehorse											●	●		
Little Missouri R at Camp Crook					●									

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 15. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Trace Metals														
Big Sioux R at Sioux Falls		Hg 21				Hg 21								
James R nr Scotland							Hg 21							
Grand R at Little Eagle				Hg 24										

Table 16. WATER QUALITY TREND TABLE - Stations and Parameters where Significant Statistical Differences were Observed.

SOUTH DAKOTA

I Improving Trend

D Degrading Trend

* Parameter Concentrations are at critical levels

STATION	TEMPERATURE	DISSOLVED OXYGEN	PH	BACTERIA	NITROGEN	PHOSPHORUS	TURBIDITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	AMMONIA	METALS
Missouri R. @ Oahe Dam								D			
Missouri R. @ Pierre								D			
Missouri R. @ Big Bend Dam					D				I		
Cheyenne R. bl Angostura Dam								I			
Cheyenne R. nr Wasta			I								
Big Sioux R. ab Waterton									I*		
Big Sioux R. nr Brookings	D										
Big Sioux R. in Sioux Falls	D								D		
Big Sioux R. nr Dell Rapids								I			
Big Sioux R. @ N. Cliff Ave.						I	I	I			I Zn
Big Sioux R. E. of Hudson								I			
Big Sioux R. nr Richland	D										
James R. nr Hecla			I					I			
James R. @ Columbia						D*					
James R. @ Huron						D*					
James R. blw Mitchell			I								
Vermillion R. W. of Chancellor						I*					
White River nr Oglala			I			I*		I			
Battle Creek nr Keystone			I						I		
Rapid Creek bl Pactola Dam			I					I			
Belle Fourche R. WY-SD Line					D						
Belle Fourche R. bl Elm Springs			I								
Spearfish Cr. in Spearfish			I			I					
Red Water R. @ Belle Fourche			I								
Bad River nr Pierre	D*								D*		
French Cr. Caster St. Park			I					D			
French Cr. nr Custer				D*							
Whitewood Cr. @ Pluma									I*		
Whitewood Cr. nr Deadwood									I*		
Whitewood Cr. nr Whitewood									I*		
Spring Cr. SW of Rapid			I								
Fall River nr Confluence						I*					

Table 17. Ranking of Critical Water Quality Stations by Pollutant Group

		WQI*
Phosphorus		
	1. Jordan R at Newstate Road	97
	2. San Juan R nr Bluff	68
	3. Price R at Woodside	53
	4. Green R at Green River	43
	5. White R at Mouth	45
Turbidity		
	1. San Rafael R nr Green River	70
	2. San Juan R nr Bluff	75
	3. Colorado R at Moab	61
	4. Colorado R at Cisco	57
	5. Price R at Woodside	55
Dissolved Solids		
	1. Malad R nr Plymouth	79
	2. San Rafael R nr Green River	76
	3. Price R at Woodside	71
	4. Dolores R nr Cisco	46
	5. Virgin R nr St George	52
Suspended Sediment		
	1. White R at Mouth	72
	2. Green R at Green R	72
	3. San Juan R nr Bluff	70
	4. San Rafael R nr Green River	71
	5. Colorado R nr Cisco	67
	6. Green R nr Jensen	100

* Average annual water quality indicator (WQI) value. A range from 20 to 60 signifies exceedence of water quality standards/criteria and the WQI greater than 60 represents exceedences of a severe nature.

Table 18. STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Utah

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21UTAH 491501 JORDAN RIVER BELOW AC PUMP PLANT	6	5	6		4	7	3	17		5	12
31UTLINK 331158 JORDAN R AT UTAH LAKE BY ROAD											
31UTLINK 331199 JORDAN R ABVE E JORDAN DIVERSION											
21UTAH 491502 JORDAN RIVER AT BLUFFDALE ROAD	6	5	6		4	8	4	19		5	14
21UTAH 491505 JORDAN AT DRAPER RIVERTON ROAD											
31UTLINK 331202 JORDAN R AT 12600 SOUTH											
21UTAH 491506 JORDAN RIVER AT 9000 ABOVE SANDY					1	1		4		1	
21UTAH 491508 JORDAN RIVER BELOW SANDY WWTP					1	1		4		1	
21UTAH 491510 JORDAN RIVER AT 7800 SOUTH											
21UTAH 491514 JORDAN RIVER ABOVE KEARNS WWTP								2			
21UTAH 491516 JORDAN RIVER BELOW KEARNS WWTP											
21UTAH 491518 JORDAN RIVER ABOVE MURRAY WWTP					1	1		4		1	
21UTAH 491520 JORDAN RIVER BELOW MURRAY WWTP					1	1		4		1	
21UTAH 491524 JORDAN RIVER ABOVE JORDAN MEAT								2			
21UTAH 491525 JORDAN RIVER BELOW JORDAN MEAT					3	3		6		3	
21UTAH 491526 GRANGER-HUNTER WWTP EFFLUENT	2		1		5	5		15		5	
21UTAH 491527 JORDAN RIV BELOW GR-HUNTER WWTP	1		1		3	3		6		3	
21UTAH 491536 JORDAN RIVER AT 2100 SOUTH								2			
21UTAH 491538 JORDAN RIVER BELOW SO SL WWTP								2			
21UTAH 491542 JORDAN RIVER AT BRIDGE ON 4TH NO											
21UTAH 491543 JORDAN RIVER AT 900 NO REDWOOD											
21UTAH 491544 JORDAN RIVER NEAR 17TH NORTH								2			
21UTAH 491545 JORDAN RIVER AT CUDAHY LANE	4		2		4	4		11		4	
21UTAH 491546 JORDAN RIVER BELOW SO DAVIS WWTP	4		2		4	4		12		4	
21UTAH 491580 JORDAN R-STATE CNL NEWSTATE RD	5	4	5		4	7	3	16		5	16

Table 18 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Utah

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
31UTLINK 331233											
JOR R AT FARM BAY NEAR BOUN DUMP 112WRD 09180500											
COLORADO RIVER NEAR CISCO UTAH 21UTAH 495560	12	10	10	9	10	20	10	30	10	10	56
COLORADO R AT US163 CROSSING 21UTAH 495695											
COLORADO R ARM L POWELL NR HITE 112WRD 09182880											
COLORADO RIVER AT HIGHWAY BRIDGE 21UTAH 490610	22	20	22		10	10	10	52	10	10	
BEAR RIVER AT UT-IDA STATE LINE 112WRD 10092200	6	5	5		5	9	5	19		5	20
BEAR R AT CORNISH UTAH 21UTAH 491427											
BEAR RIVER WEST OF RICHMOND 21UTAH 491429											
BEAR RIVER BELOW CONFL WITH CUB 21UTAH 491433											
BEAR RIVER AT AMALGA 112WRD 10126100											
BEAR RIVER AT BIRD REFUGE NR BRI 112WRD 10136500	1					2		2			
WEBER RIV AT GATEWAY UTAH 112WRD 10129300	12	11	11			24		22			
WEBER RIVER NR. PEOA, UTAH 112WRD 10130500											
WEBER RIVER NEAR COALVILLE UTAH 21UTAH 491406	7							7			
WEBER R. ABOVE CENT WEBER WWTP 21UTAH 491408											
WEBER RIVER BELOW CENTRAL WEBER 112WRD 10141100											
SOUTH FORK WEBER RIVER NR HOOPER 112WRD 10141150											
MIDDLE FORK WEBER RIVER NR HOOPE 112WRD 10141200											
NORTH FORK WEBER RIVER NR. HOOPE 112WRD 09234500											
GREEN RIVER NEAR GREENDALE, UTAH 112WRD 09261000	12	10	10	10	9	18	9	28	8	9	54
GREEN RIVER NEAR JENSEN, UTAH 112WRD 09315000	12	9	10			18		19	3		
GREEN RIVER AT GREEN RIVER, UTAH 112WRD 10125600	15	10	10	9	10	20	10	31	14	10	56
MALAD R NR PLYMOUTH UTAH 112WRD 10163000	7							7			
PROVO RIVER AT PROVO UTAH 21UTAH 491586											
PROVO R US189 CROSSING-ROTARY PK	6	5	5		3	6	4	16		4	15

Table 18 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Utah

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
21UTAH 491590 PROVO R-UPPER FALLS ON US150	6		6		6	7		16		7	
112WRD 10152000 SPANISH FORK NEAR LAKE SHORE, UT	9							9			
21UTAH 492430 OGDEN R-MOUTH OF CANYON											
112WRD 10237000 BEAVER RIV AT ADAMSVILLE, UTAH	8	7	8	3	8	16	8	24	7	8	69
21UTAH 494128 SEVIER RIVER ABV GUNNISON BND RS	6	6	6		4	7	4	24		3	12
112WRD 10219000 SEIVER RIV NR JUAB UTAH	7							7			
112WRD 10217000 SEVIER RIVER BLW SAN PITCH R NR	6							6			
112WRD 10191500 SEVIER RIVER BELOW PIUTE DAM NR	7	7	7			2		9			
21UTAH 494965 EVIER RIVER NEAR WATCH	6	6	6		3	4	3	16		3	14
112WRD 10189000 EAST FORK SEVIER RIVER NEAR KING	7							8			
112WRD 09234700 RED CREEK NEAR DUTCH JOHN,UTAH											
112WRD 09288180 STRAWBERRY RIVER NEAR DUCHESNE,	8							8			
112WRD 09302000 DUCHESNE RIVER NEAR RANDLETT, UT	10	8	9		9	9	9	27	16	9	42
112WRD 09306500 WHITE R NR WATSON UT	18	6	2		4	14	4	21	10	4	14
112WRD 09306900 WHITE RIVER AT MOUTH NEAR OURAY	23	14	13	10	17	34	14	48	25	14	56
21UTAH 495318 PRICE R BRIDGE AB NO AM COAL CO											
112WRD 09314500 PRICE RIVER AT WOODSIDE, UTAH	10	10	10		9	10	10	30	18	9	28
112WRD 09328500 SAN RAFAEL RIVER NEAR GREEN RIVE	13	11	13		10	12	10	36	18	10	32
112WRD 09180000 DOLORES RIVER NEAR CISCO,UT.	13	11	13			6		25			
112WRD 09333500 DIRTY DEVIL R AB POISON SP WA NR	6							6			
21UTAH 495707 SAN JUAN R- US160 CROSSING											
112WRD 09379500 SAN JUAN RIVER NEAR BLUFF, UTAH	15	9	10	9	10	20	10	30	12	10	56
21UTAH 495177 KANAB CK AB KANAB WWTP OUTFALL	2		1		2	2		2		1	

Table 19 . TABLE OF CRITICAL STATIONS AND PARAMETERS. UTAH

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Temperature														
Green R at Green River								X						
San Rafael R nr Green River								X						
Virgin R nr St. George							X							
Dissolved Oxygen														
Green R nr Greendale	X													
pH														
Colorado R at Moab											X			
Fecal Coliform Bacteria														
White R at Mouth								○					12	
San Juan R nr Bluff									●	●			28	
Nitrite Nitrate														
Jordan R at Cudahy Lane										○				
Jordan R blw S Davis										○				
Jordan R at Newstate Rd							○						43	
Phosphorus														
Jordan R abv Murray WWTP					●									
Jordan R blw Murray WWTP					●									
Jordan R blw Jordan Meat						○					●			
Jordan R blw Gr-Hunter						○					●			
Jordan R at Cudahy Lane			○							●				
Jordan R blw S Davis			●			○				●				
Jordan R at Newstate Rd	●						●		●		●		97	1
Colorado R abv Moab			○	●	●								33	
Green R nr Ouray					●									

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 19 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Phosphorus Continued														
Green R at Green River			○	●	●		○		●				43	4
White R at Mouth			●	○	●	●		●					45	5
Price R at Woodside	○	●	●	●	●								53	3
San Rafael R nr Green River		●	●				○						39	
San Juan R nr Bluff	●		●	●	●				●	●			68	2
Virgin R nr St. George	●												28	
Colorado R nr Cisco			○	●	●								37	
Green R nr Jensen					●								19	
Turbidity														
Colorado R nr Cisco, UT		●	●	●	●	●	●		●				57	4
Colorado R at Moab		●	●		●	●	●		●				61	3
Green R at Dinosaur Natl Park			●	●	●	○			●				51	
Green R nr Ouray									○					
Green R at Green River					●		●		●				48	
Duchesne R nr Randlett						○							15	
White R nr Watson				●			●						41	
White R at Mouth			●		●	●	●	●					52	6
Price R at Woodside		●	●	●	●		●						55	5
San Rafael R nr Green River	●	●	●	○	●		●	●	○				70	1
San Juan R nr Bluff					●	●			●				75	2
Santa Clara R nr St. George			●											
Total Dissolved Solids														
Jordan R blw Utah Lake	○												35	
Jordan R blw Sandy WWTP			○											
Jordan R at Newstate Rd	●												35	
Sevier R abv Gunnison Bend	○									○	○		46	
Sevier R blw San Pitch R							○						39	
Duchesne R nr Randlett								○		○			13	
Price R at Woodside	●	●	●				○	●	●	●		●	71	3
San Rafael R nr Green River	●	●	●	●	●			●	●	●		●	76	2
Santa Clara R nr St. George	●								●		○		44	
Virgin R nr St. George						●		●	●				52	5
Sevier R nr Juab					○			○					45	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 19. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Total Dissolved Solids Continued														
Malad R nr Plymouth	●		○	●	●	●		●	●				79	1
Dolores R nr Cisco	●	●						●	●	●	●	○	46	4
Dirty Devil R abv Poison Spgs Wash					●		●						46	
Suspended Sediment														
Colorado R nr Cisco	○		●	●	●	●							67	5
Green R nr Greendale									●				13	
Green R nr Jensen			●	●		●							100	6
Green R at Green River			●	●	●	●	●		●				72	2
Beaver R at Adamsville						●							13	
White R nr Watson	○		●			●	●						64	
White R at Mouth	●			●	●			●	●				72	1
San Juan R nr Bluff	●	○	●		●	●		●					70	3
Colorado R at Moab			●	●	●								45	
Duchesne R nr Randlett						●							18	
Price R at Woodside		●	●	●			○						47	
San Rafael nr Green River	●	●	●		●		●	○					71	4

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels — Insufficient data

Table 19 . TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Trace Metals														
Jordan R blw Utah Lake			Hg 21											
Jordan R at Bluffdale Rd			Hg 21											
Jordan R at Newstate Rd			Hg 21						Hg 21					
Colorado R nr Cisco			Hg 22	Hg 21	Hg 21				Hg 21					
Colorado R nr Moab			Hg 21	Hg 21	Hg 21									
Green R at Dinosaur Natl Park			Hg 21	Hg 21	Hg 21	Hg 22								
Green R at Green River			Hg 21				Hg 21							
Provo R nr Springdell			Hg 21		Cu 35									
Beaver R at Adamsville								Hg 21						
Sevier R abv Gunnison Bend			Hg 21											
Sevier R nr Hatch								Hg 31						
Virgin R nr St. George			Hg 22											

Table 20. WATER QUALITY TREND TABLE.
Stations and Parameters where Significant Statistical Differences were Observed.

UTAH

STATION	TEMPERATURE	DISSOLVED OXYGEN	PH	BACTERIA	NITROGEN	PHOSPHORUS	TURBIDITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	AMMONIA	METALS
Colorado River nr Cisco									D*		
Weber R. @ Gateway			D								
Weber R. nr Coalville								D			
Green River nr Greendale								D			
Green River @ Green River			I								
White R. nr Watson								I			
White R. @ Mouth nr Ouray				D*							
San Juan R. nr Bluff				D*							
Virgin R. SE of St. George			I					D*			

LEGEND

I Improving Trend

D Degrading Trend

* Parameter Concentrations are at critical levels

Table 21. Ranking of Critical Water Quality Stations by Pollutant Group

Fecal Coliform Bacteria		WQI*
1.	N Platte R blw Casper	37
Phosphorus		
1.	Laramie R at Howell	73
2.	Laramie R at Two Rivers	63
3.	Belle Fourche R blw Moorcroft	44
4.	Powder R at Arvada	32
Turbidity		
1.	Powder R nr Kaycee	48
2.	Big Horn R at Kane	38
Dissolved Solids		
1.	Salt Cr nr Sussex	84
2.	Beaver Cr nr Newcastle	68
3.	Belle Fourche R blw Moorcroft	57
4.	Powder R at Arvada	52
Suspended Sediment		
1.	Powder R at Arvada	100
2.	Big Horn R at Kane	73
3.	Salt Cr nr Sussex	69
4.	Shoshone R nr Lovell	55
5.	N Platte R at Orin	54

* Average annual water quality indicator (WQI) value. A range from 20 to 60 signifies exceedence of water quality standards/criteria and the WQI greater than 60 represents exceedences of severe nature.

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Table 22. STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Wyoming

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 09188500											
GREEN RIVER AT WARREN BRIDGE, NE 112WRD 09192600	25	11	8	12		14	21	35	11		
GREEN RIVER NEAR BIG PINEY, WYO. 112WRD 09209400	12		2		12	15	9	24	9		
GREEN R NR LABARGE WYO 112WRD 09211200	31	12	13	11	24	15	24	40	26	12	28
GREEN R BEL FONTENELLE RES WYO 112WRD 09216300	26	12	13	10	23	12	24	38	24	11	14
GREEN RIVER AT BIG ISLAND, NEAR 21WYDHSS 000531	12		8		12	12		24	12		
GREEN RIVER AT USGS 09217000 112WRD 09217000											
GREEN R, NR GREEN RIVER, WYO. 112WRD 09217010	26	12	12	11	14	14	25	39	14	12	28
GREEN RIVER BELOW GREEN RIVER WY 112WRD 06312500	14	12	12	11	14	13	12	25		12	28
POWDER RIVER NEAR KAYCEE, WYO. 21WYDHSS 000385	14	12	8	12	13	14	12	23		1	
POWDER R NEAR SUSSEX WYOMING 21WYDHSS 000514											
POWDER RIVER AT USGS 06317000 112WRD 06317000											
POWDER R AT ARVADA WYO 21WYDHSS 000398	23	4	9	4	14	16	9	30	9	2	
NORTH PLATTE N-EAST OF SARATOGA 112WRD 06630000	1	1	1	1		1	1	2	1		
N PLATTE R AB SEMINOE RES NR SIN 112WRD 06642000	12	12	7	12	12	12	12	19			
NORTH PLATTE R AT ALCOVA WYO 112WRD 06645000	12	12	7	12	12	12	12	19			
NORTH PLATTE RIVER BL CASPER WYO 112WRD 06646800	26	24	26	24	37	26	26	64	26	25	
N PLATTE R NR GLENROCK WYO 21WYDHSS 000400	7				12	12		12			
NORTH PLATTE SOUTH OF DOUGLAS 112WRD 06652000	1	1	1				1	1			
NORTH PLATTE R. AT ORIN, WYO. 112WRD 06652800	22	11	7	11	11	11	11	21	15		42
NORTH PLATTE RIVER BELOW GLENDO 112WRD 06656000	11	11	7	10	11	11	11	18			
NORTH PLATTE R BL GUERNSEY RE, W 112WRD 06644085	3				12	12		12			
NORTH PLATTE RIVER AT MILLS WYO 112WRD 06670900	21	21	21				21	23			
NORTH PLATTE RIVER NEAR LINGLE, 21WYDHSS 000295											
NPLATTE BLW CON WITH RAWHIDE CR 112WRD 06674500	2	2	2			2	2	4	2		
N PLATTE R AT WYO-NEBR STATE LIN	20	11	7	9	11	11	11	22	13		

Table 22 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Wyoming

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 06218500 WIND RIVER NEAR DUBOIS, WYO.	12	12	6	10	12	12	10	12			
21WYDHSS 000392 WIND-BIGHORN R CROWHEART DAM WYO	2	2	2	2	1	2	2	3	2		
112WRD 06228000 WIND R AT RIVERTON WYO	11	10	5	10	11	11	10	11			
112WRD 06236100 WIND RIVER AB BOYSEN RE NR SHOSH	14	12	6	12		12	12	13			
112WRD 06259000 WIND R BL BOYSEN RES WYO	14	11		10	12	12	11	27	3		28
112WRD 06259500 BIGHORN RIVER AT THERMOPOLIS, WY											
21WYDHSS 000391 WIND-BIGHORN R EAST OF LUCERNE	1	1	1	1	1	1	1	2	1		
112WRD 06264700 BIGHORN RIVER AT LUCERNE, WYO.	11	2	2	2	12	12	2	14			
112WRD 06268600 BIGHORN R AT WORLAND WYO	8				12	12		12			
21WYDHSS 000390 WIND-BIGHORN R N OF WORLAND WYO	2	2	2	2	1	2	2	3	2		
112WRD 06279500 BIGHORN R AT KANE WYO	20	12	7	12	12	12	12	24	6		
112WRD 06231000 LITTLE WIND R ABOVE ARAPAHOE, WY	12		6		12	12		12			
112WRD 06235500 LITTLE WIND R NR RIVERTON WYO	12		6		13	13		13			
112WRD 06235000 BEAVER CREEK NR ARAPAHOE WYO	6		1		6	6		6			
112WRD 06394000 BEAVER CREEK NEAR NEWCASTLE, WYO	11	1	2		13	18	1	16	1	3	
112WRD 06282000 SHOSHONE RIVER BELOW BUFFALO BIL	11	9	6	9	11	11	9	17			
112WRD 06282900 SHOSHONE RIVER AB DRY C NR CODY,	12	12	7	12		13	11	19			
112WRD 06285100 SHOSHONE RIVER NEAR LOVELL WYO	22	2	7	2		24	2	24	10		
21WYDHSS 000386 SHOSHONE 5.5 MILES FROM GARLAND	2	2	2	2	1	2	2	3	2		
112WRD 06298000 TONGUE RIVER NR DAYTON WYO	12		7		12	12	9	19			
112WRD 06299980 TONGUE RIVER AT MONARCH WYO	14	11	13	12	13	14	12	28		13	28
112WRD 06313400 SALT CREEK NEAR SUSSEX, WYO.	21	11	11		21	11		25	16	10	35
112WRD 06324000 CLEAR CREEK NEAR ARVADA WYO	27	11	14	11	26	16	12	31	23	14	28
21WYDHSS 000395 CLEAR CR EAST OF BUFFALO WYOMING	1	1	1	1		1	1	2	1		
112WRD 06426500 BELLE FOURCHE RIVER BELOW MOORCR	23	13	13	12	14	17	13	25	12	14	28

Table 22 (Continued). STATION AND PARAMETER GROUP COVERAGE.
Water Quality Data for Year 1978 - Wyoming

STATION	TEMP	DO	PH	FECAL COLI	NIT	PHOS	TURB	DIS SOLID	SUSP SOLID	NH3	METALS
112WRD 06427850											
BELLE FOURCHE RIVER AT DEVILS TO	11		7		11	11	11	18			
112WRD 06428500											
BELLE FOURCHE R AT WY-SD STATE L	20	11	11	11	21	12	11	29	9	9	28
112WRD 06623800											
ENCAMPMENT RIV AB HOG PARK CR NR	9	9	9	9	10	9	1	27	7		7
112WRD 06625000											
ENCAMPMENT RIVER AT MOUTH, NEAR	12	9	7	7	12	12	9	18			
112WRD 06639000											
SWEETWATER RIVER NEAR ALCOVA, WY	12	12	7	12	12	12	12	23	16		56
21WYDHSS 000294											
SWEETWATER R N OF JEFFREY CITY	2	2	2	2	1	2	2	3	2		
21WYDHSS 000234											
SWEETWATER R SWEETWATER STATION											
112WRD 06660100											
LARAMIE RIVER AT HOWELL, WY	12	11	8	11		12	12	20			
112WRD 06660500											
LARAMIE RIVER AT TWO RIVERS, WY	12		8		12	12		20			
112WRD 06670500											
LARAMIE RIVER NR FT LARAMIE WYO	19	11	7	9	11	11	11	22	12		
112WRD 06661500											
LITTLE LARAMIE RIVER AT TWO RIV	12		8		12	12		20			
21WYDHSS 000309											
LARAMIE R, NE OF WHEATLAND	1	1	1			1		2	1		
112WRD 10020100											
BEAR RIVER ABOVE RESERVOIR NEAR	15	3	3	3	7	7	3	18			
112WRD 10027000											
TWIN CREEK AT SAGE WYO	29	11	12	11	14	13	29	42	17	12	28
112WRD 10039500											
BEAR R AT BORDER WY	22	12	13	12	24	24	20	46	12	12	56
21WYDHSS 000382											
BEAR R @ STATE 89 HIGHWAY WYO	1	1	1	1	1	1	1	2			
112WRD 13022500											
SNAKE RIVER AB RESERVOIR NR ALPI	18	11	8	12	12	12	12	30			
112WRD 13011000											
SNAKE RIVER NEAR MORAN	5							5			
112WRD 13016100											
SNAKE RIVER NEAR WILSON WYOMING											
21WYDHSS 000397											
SNAKE R SOUTH OF JACKSON WYOMING											
112WRD 13027500											
SALT RIVER AB RESERVOIR NR ETNA	18	11	8	12	12	12	12	26			
21WYDHSS 000399											
SUGER CR N-WEST OF SINCLAIR WYO.	2	2	2	2	2	2	2	4			

Table 23. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Temperature														
Beaver Cr nr Newcastle								X						
Dissolved Oxygen (DO)														
N Platte R at WY-NB line										●				
Salt Cr nr Sessex		○									X			
Sugar Cr nr Sinclair		X			X									
pH														
Shoshone R blw Buffalo Bill Res								X	X	X				
Laramie R at Two Rivers									X					
Fecal Coliform Bacteria														
Powder R nr Kaycee					○			○	○				29	
N Platte R blw Casper		●	●								○		37	
Big Horn R at Kane						○							22	
Belle Fourche R blw Moorcroft								○					22	
Sugar Cr nr Sinclair		●			●									
Nitrate														
N Platte R at WY-NB line	○										●		32	
Belle Fourche blw Moorcroft									●	●			22	
Phosphorus														
Powder R nr Kaycee			●	○		●							30	
Powder R at Arvada						●		○					32	4
N Platte R blw Casper					○	○							23	
N Platte R nr Glenrock		○											24	
N Platte R at Orin			○										21	
N Platte R nr Lingle	●													
Wind R nr Dubois			●										22	
Wind R at Crowheart Dam				○										
Wind R blw Worland				○										

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 23. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Phosphorus Continued														
Big Horn R at Kane			●			●							28	
Beaver Cr nr Arapahoe						●							19	
Beaver Cr nr Newcastle			○											
Shoshone R nr Garland				●										
Salt Cr nr Sussex			●		●								32	5
Belle Fourche R blw Moorcroft	●	●	●		○				○				44	3
Belle Fourche R at WY-SD line						●							16	
Sweetwater Cr nr Alcova			○											
Sweetwater Cr nr Jeffrey City					○									
Laramie R at Howell	●	●	●		●			●	●	●	●	●	73	1
Laramie R at Two Rivers	●	●	●						○	●	●	●	63	2
Twin Cr at Sage					●								14	
Sugar Cr nr Sinclair		●			●									
Turbidity														
Green R nr La Barge				○									10	
Green R nr Green River			○										13	
Green R blw Green River			○											
Powder R nr Kaycee		○	●		●	●			●				48	
Powder R at Arvada						●		○					85	
N Platte R blw Casper					●	●							24	
N Platte R at Orin					○	●		○					26	
N Platte R at Mills					●	○								
Wind R at Crowheart Dam			●											
Wind R blw Worland			●											
Big Horn R at Kane				●	●	●							38	
Beaver Cr nr Newcastle						○								
Shoshone R nr Garland			●											
Tongue R at Monarch						○								
Belle Fourche R blw Moorcroft			○		●			●					33	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 23. TABLE OF CRITICAL STATIONS AND PARAMETERS.

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG WQI	RKG.
Turbidity Continued														
Belle Fourche R at Devils Tower			○		●								20	
Belle Fourche R at WY-SD line			○		●	●							28	
Twin Cr at Sage			○	●	●	●							29	
Bear R at Border					○								11	
Total Dissolved Solids														
Powder R at Arvada	●	○	○		○		○	●	●	○	○	○	52	4
Beaver Cr nr Arapahoe	○						○						39	
Beaver Cr nr Newcastle	●	●		○		●	○	●	●	○	○		68	2
Salt Cr nr Sussex	●	●		●		●	●	●	●	●	○		84	1
Belle Fourche R blw Moorcrcft	●	●				○	○		○	○	○	○	57	3
Belle Fourche R at Devils Tower											○	○	34	
Belle Fourche R at WY-SD line		○								○	○	○	41	
Sugar Cr nr Sinclair		●			●									
Twin Cr at Sage												●	27	
Suspended Sediment														
Green R nr Big Piney					○	●							19	
Green R nr La Barge						○								
Green R nr Green River			●											
Powder R at Arvada			●	●	●	●	●						100	1
N Platte R at Orin	●	●			●	●	●	●					54	5
N Platte R at WY-NB line							●							
Big Horn R at Kane				●	●		●			○			73	2
Shoshone R nr Lovell			○		●	●	●						55	4
Salt Cr nr Sussex	●		●		●	●	●		○		●	○	69	3
Clear Cr nr Arvada					●	●	○						35	
Belle Fourche R blw Moorcroft			●		●		○						37	
Laramie R nr Ft. Laramie					●									
Twin Cr at Sage			●	●	●	●							43	
Bear R at Border					○								15	
Belle Fourche R at WY-SD line			○										10	
N Platte R blw Casper					●	●							24	

X Minor exceedence of standards (for Temperature, DO, and pH only)

○ At or approaching critical levels ● Above critical levels – Insufficient data

Table 24. WATER QUALITY TREND TABLE. Stations and Parameters where Significant Statistical Differences were Observed.

WYOMING

I Improving Trend
D Degrading Trend
* Parameter Concentrations are at critical levels

STATION	TEMPERATURE	DISSOLVED OXYGEN	PH	BACTERIA	NITROGEN	PHOSPHOROUS	TURBIDITY	DISSOLVED SOLIDS	SUSPENDED SOLIDS	AMMONIA	METALS
Green R. @ Warren Bridge									D		
Green R. nr Labarge							D*		D		
Green R. bl Fontenelle Res.						D					
Green R. @ Big Island								I			
Powder River nr Kaycee								I			
Powder River @ Arvada	I										
North Platte R. ab Seminoe Res.					D						
North Platte R. @ Alcova					D			D			
North Platte R. blw Cooper		D		I*			D*	D			
North Platte nr Glen Rock						D*		D			
North Platte R. @ Orin					D			D			
North Platte R. @ Mills	D		D				D*	D			
North Platte R. @ WY-NB Line						D		D			
Wind River nr Dubois		D			D						
Big Horn River @ Lucerne					D	D					
Big Horn River @ Worland						D					
Big Horn River @ Kane					D						
Shoshone R. blw Buffalo Bill					D	D					
Shoshone R. nr Lovell						D					
Tongue R. nr Dayton			D			D					
Salt Creek nr Sussex						D*					
Clear Creek nr Arvada	D										
Belle Fourche R blw Moorcroft					D*	D*		D*			
Belle Fourche R. @ Devil's Tower			D								
Belle Fourche @ WY-SD Line					D						
Sweetwater R. nr Alcova					D						
Laramie R. @ Two Rivers						D*					
Little Laramie R. @ Two Rivers						D					
Twin Creek @ Sage									D*		
Snake River ab Res. nr Alpine						D					
Salt River ab Res. Etna						D		D			

SECTION IV

AIR QUALITY REPORT

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SUMMARY AND CONCLUSIONS

Air Quality

Trend analyses performed on the 1976, 1977 and 1978 air quality data available in the SAROAD system indicates that 24 of the 91 counties where sufficient data were available experienced statistically significant changes (improved or deteriorated) for at least one pollutant group. A severity analysis of the 1978 air quality data shows that total suspended particulates continues to present the most wide-spread pollutant problem in this region where the 12 of the 17 counties which exceeded the primary standard also exceeded alert levels. Four counties exceeded the sulfur dioxide standard and 10 counties exceeded the carbon monoxide standard.

A comparison of the findings of this report and the report titled EPA-908/2-78-001, "Water And Air Quality Trends in Region VIII" which included data for 1974-1976 reveals that levels for suspended particulate, sulfur dioxide, and nitrogen dioxide generally remained at approximately the same levels over the two time periods. There was a significant decrease in the number of counties exhibiting carbon monoxide standards violations both in Colorado and Utah. Ozone violations decreased in Colorado.

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OVERALL REGIONAL AIR QUALITY

The color coded maps which are displayed on the following pages generally reflects the air quality for the worst site in each county of the region on a pollutant by pollutant basis. 1978 data analyzed for severity was used to construct these graphics.

Table 25.

Summary of Air Monitoring in
Region VIII in 1978

	TSP	SO_2	NO_2	CO	Oxidants (ozone)[2]	Total
Total sites	283	75	67	27	27	480
Counties with data	130	49	50	17	20	266
Counties exceeding primary standard	27	2	0	13	4	46
Counties exceeding alert level	11	2	0	3	1	17
Counties with deteriorating air quality	3	2	3	1	4	13
Counties with improving air quality	14	3	3	5	1	26
Counties with insufficient data or no discernible trend	113	44	46	11	15	229

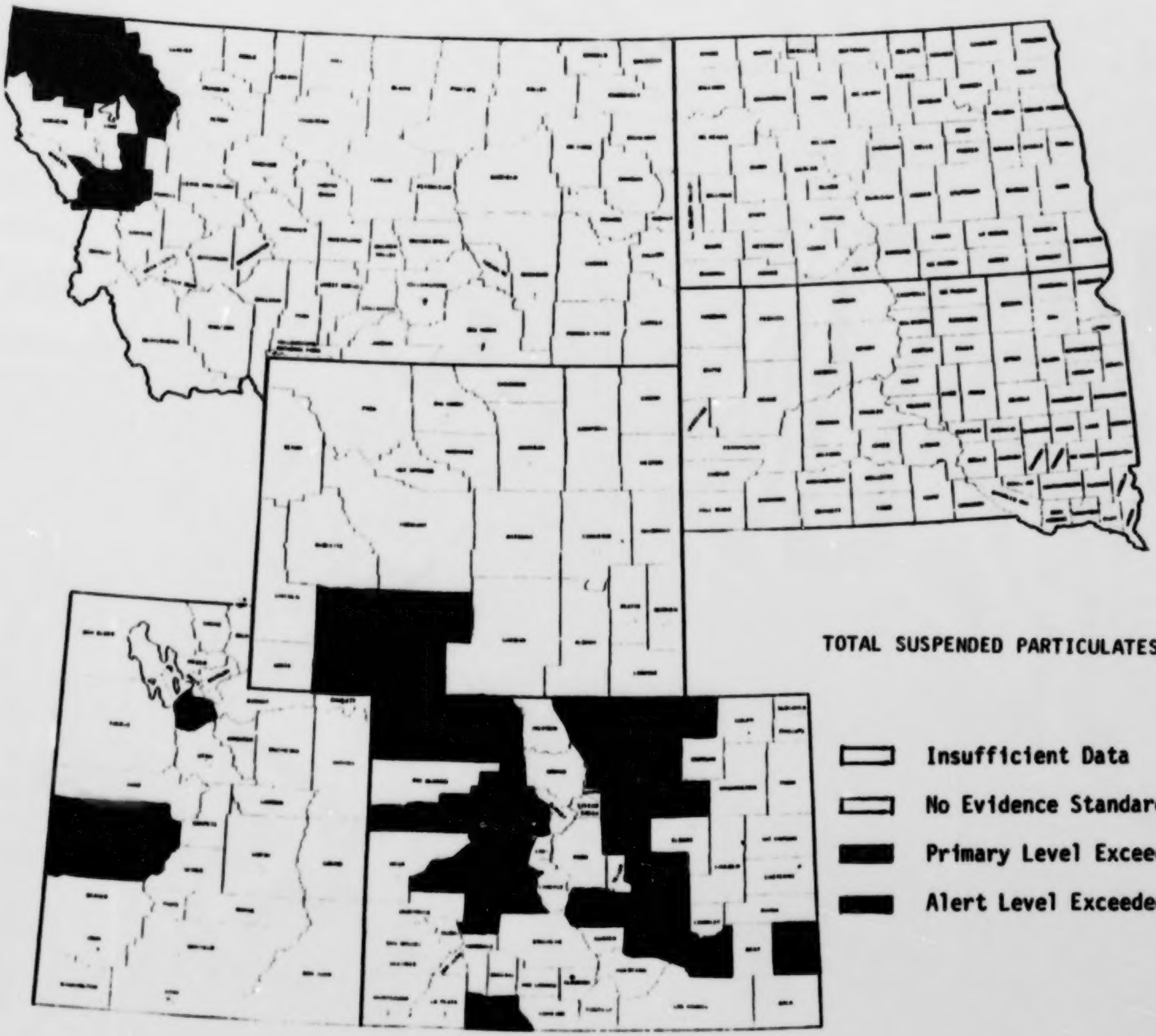
Total number of counties: 293

---

[1] U.S. EPA. "Guideline for Public Reporting of Daily Air Quality -- Pollutant Standards Index (PSI)," EPA 450/2-76-013, August 1976.

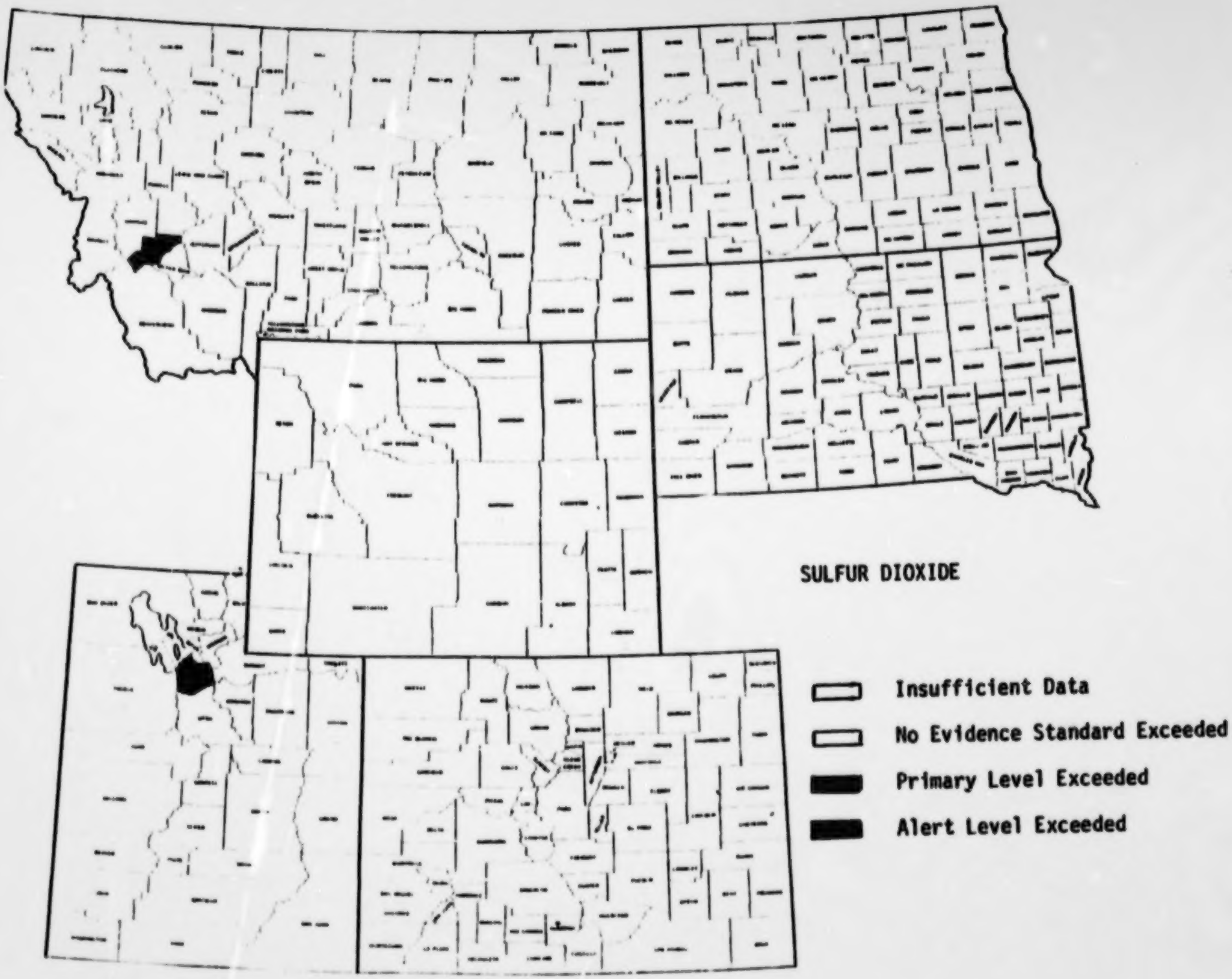
[2] Instrumentation measures ozone which is the primary constituent of oxidants.

TOTAL SUSPENDED PARTICULATES



- ☐ Insufficient Data
- ☐ No Evidence Standard Exceeded
- ■ Primary Level Exceeded
- ■ Alert Level Exceeded

AIR QUALITY STATUS - 1978


SULFUR DIOXIDE
▭ Insufficient Data
▭ No Evidence Standard Exceeded
■ Primary Level Exceeded
■ Alert Level Exceeded

AIR QUALITY STATUS - 1978

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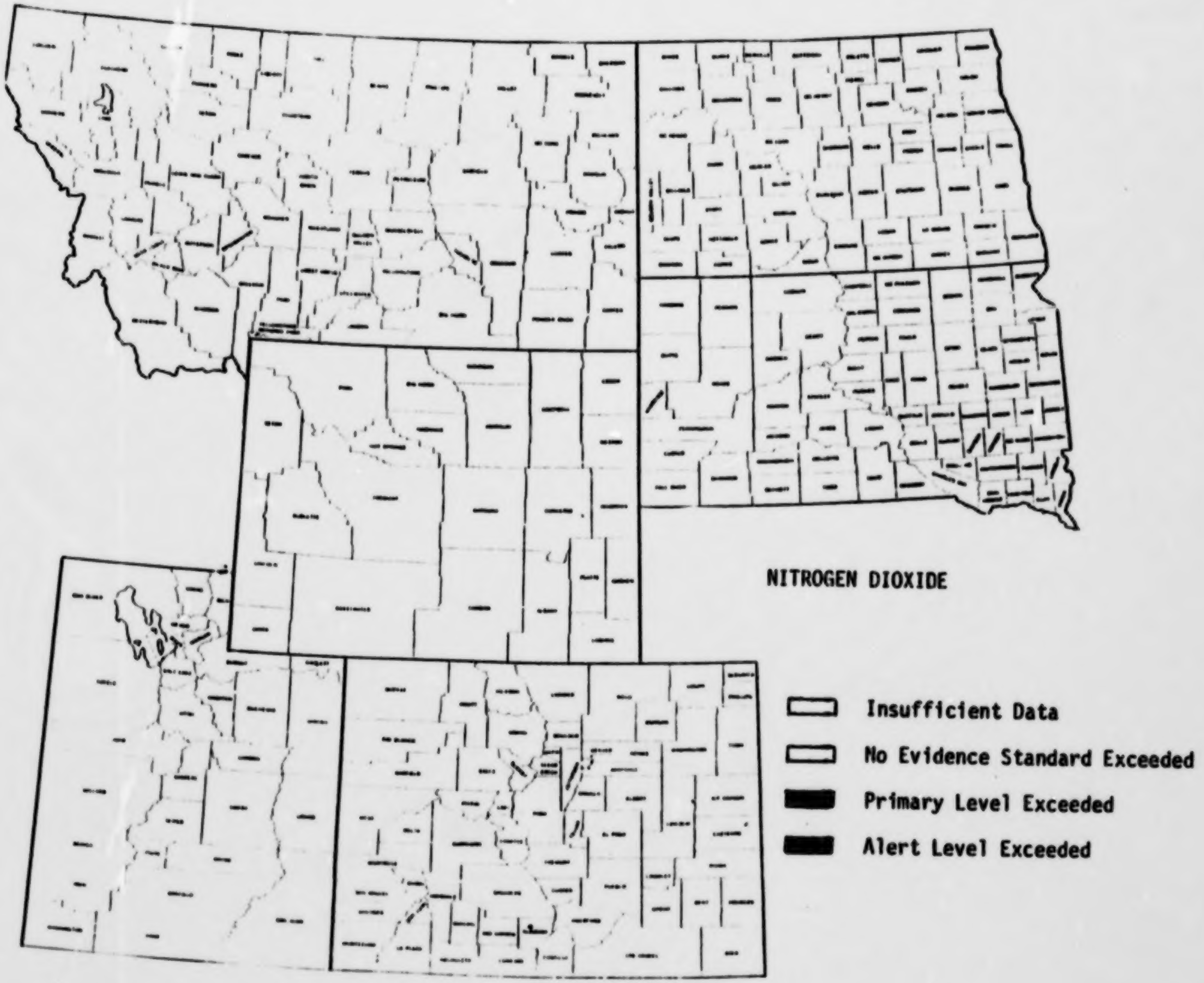
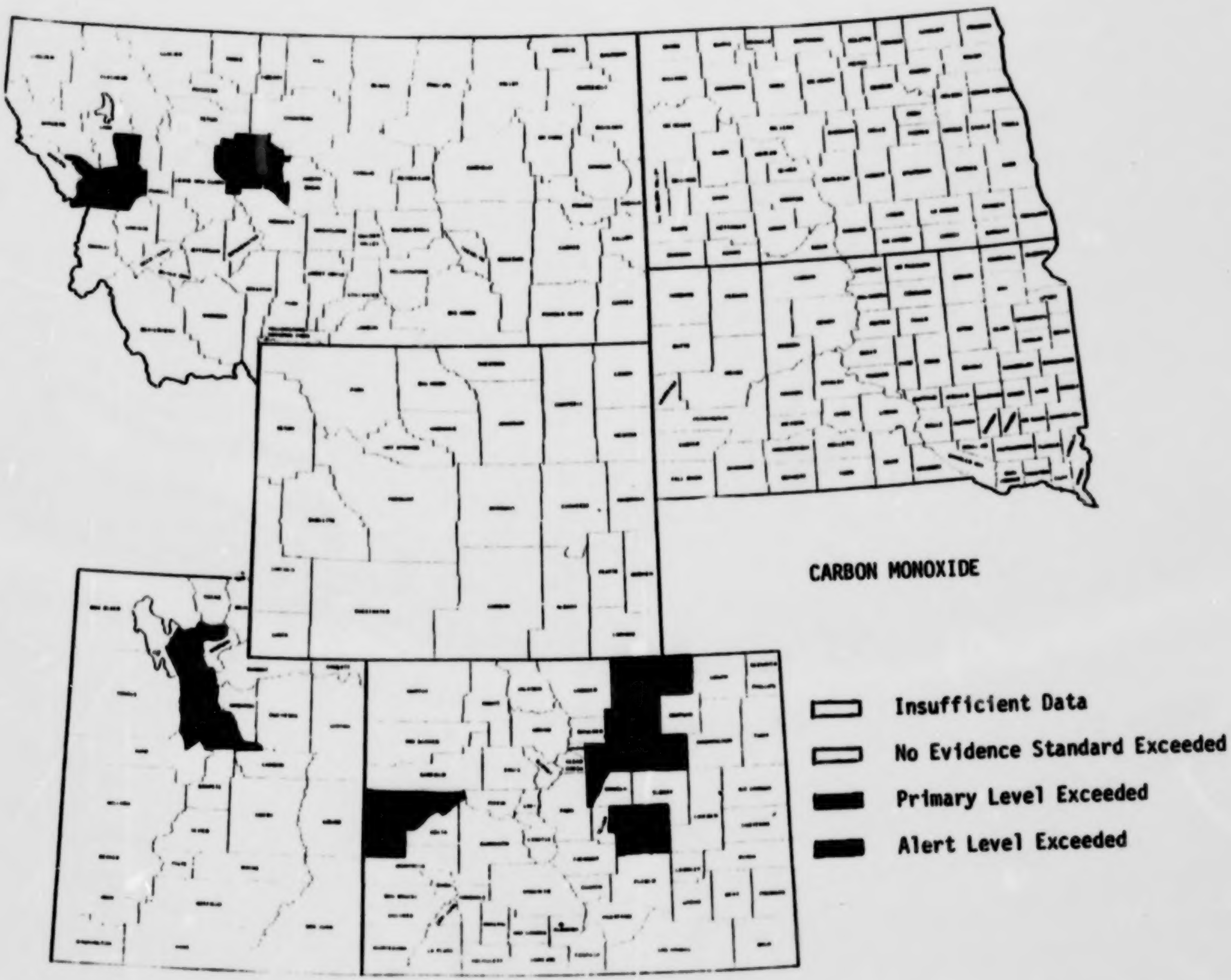

NITROGEN DIOXIDE
Insufficient Data
No Evidence Standard Exceeded
Primary Level Exceeded
Alert Level Exceeded

AIR QUALITY STATUS - 1978


Insufficient Data
No Evidence Standard Exceeded
Primary Level Exceeded
Alert Level Exceeded

CARBON MONOXIDE

AIR QUALITY STATUS - 1978

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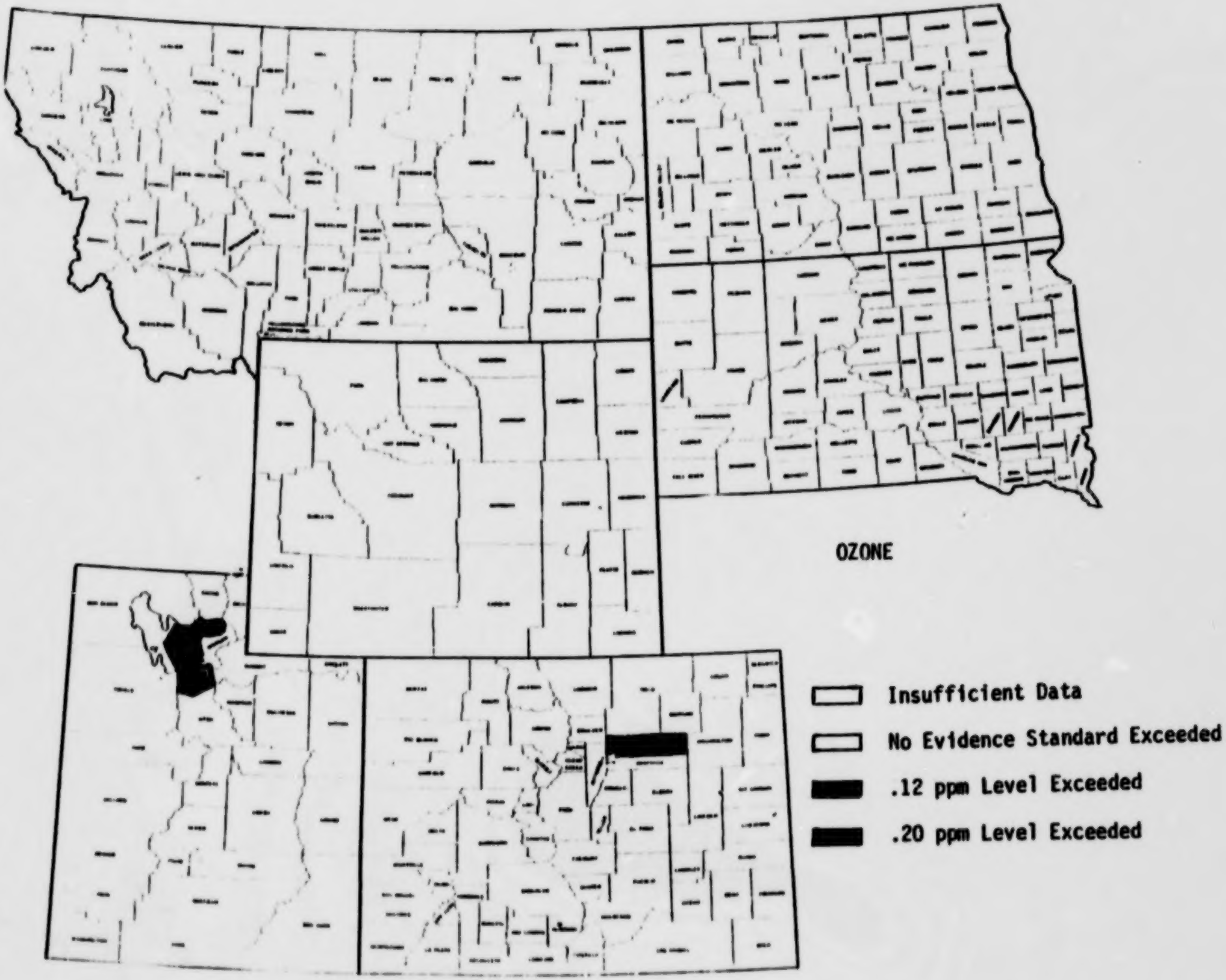
OZONE
Insufficient Data
No Evidence Standard Exceeded
.12 ppm Level Exceeded
.20 ppm Level Exceeded

AIR QUALITY STATUS - 1978

AIR QUALITY STANDARDS

The Environmental Protection Agency has been given the authority to establish ambient air quality standards which specify, for the principal and most widespread classes of air pollutants, limitations necessary to protect the public health and welfare. These pollutants currently are total suspended particulate matter, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide. Standards for lead have recently been proposed.

Two types of standards were established. Primary standards are set at levels to protect human health. Secondary standards are set at levels to protect against other forms of damage to such things as vegetation and materials. The numerical value of each standard is listed in Appendix B.

Several causes and the health effects of these pollutants are shown below:

> TSP is a measurement of particles in the air (such as soot, mist, and sprays) and includes non-toxic materials (dust and dirt) as well as toxic materials (lead, asbestos, sulfates). Natural and man-made sources contribute to TSP which affects the respiratory system in varying degrees depending on particle size and chemical composition.
>
> Sulfur dioxide (SO_2), the most common form of SO_2 in the atmosphere, results from combustion of coal and gas or as a by-product in mineral smelting operations. SO_2 reacts readily with other atmospheric pollutants to form sulfates, a group of compounds responsible for respiratory ailments (bronchitis, emphysema and asthma) and the aggravation of heart disease.

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NO_2 is a brown gas formed during high temperature combustion (automobile engines, power plant boilers), NO_2 can affect lung tissue, reduce resistance to disease, contribute to bronchitis or pneumonia, and aggravate chronic lung disease. It reacts with hydrocarbon in the presence of sunlight to produce photochemical oxidants.

CO is a colorless, odorless, tasteless gas--a toxic product of combustion. The automobile engine represents the major single source of this pollutant. CO in the lungs reduces the oxygen available to tissues and decreases heart and mental functions, visual perception and general alertness. For those with heart and lung problems, CO presents a life-threatening situation.

Photochemical Oxidant compounds are formed by a complex series of chemical reactions occurring when hydrocarbons and nitrogen oxides from motor vehicles or other emission sources are exposed to sunlight. Ozone, the critical constituent in oxidants, is a severe irritant to mucous membranes and may reduce lung function or aggravate existing lung disorders.

ANALYTICAL PROCEDURES - AIR

Status and Severity Analysis

Status and severity of air quality are determined by comparing measurements made at monitoring stations to air pollution standards. The indicator used to characterize air quality status in this manner was the number of days in which measurements exceed the primary standards at the worst site in each county. The indicator may not actually represent air quality for the entire county, however the worst site is always selected in an area where measured concentrations are affecting some segment of the population.

Another indicator is used to demonstrate the severity of the problem. Each pollutant has been assigned an alert level, the concentration at which the public must be notified of possible adverse health affects. These values shown in Appendix C are significantly higher than the standards and are not frequently encountered.

These two indicators correspond to break points in the Pollutant Standards Index (PSI) which is becoming the nationwide index for reporting air quality levels to the public. In the PSI the worst site pollutant concentration in each metropolitan area is chosen, and the index is calculated from the concentration at the site referenced to primary standards and alert levels. These methods are detailed by pollutant in Appendix D.

Trend Analysis

Most research indicates that air pollutants are log-normally distributed. Utilizing this assumption, the relationship between normally and log-normally distributed variables can be exploited in formulating statistics that are useful in trend analysis. The statistic that is a confidence interval estimate of the location of the underlying distribution is usually the one used, since significant differences in such a statistic suggests significant differences in the locations or the distributions in question. In other words, each year has its own distribution and any significant location shifts from year-to-year would indicate significant shifts in pollutant concentration. Since the location of a log-normal distribution is a difficult parameter for which to formulate a confidence interval, the method of forming a confidence interval around the location (mean) of the accompanying normal distribution was used. The bounds on the confidence interval were then converted back to actual concentration form. Since more than one interval was computed for each trend determination, the Bonferronii technique was utilized, which yielded a family confidence for whatever number of intervals that were to be constructed. The method used is as follows:

(1) Take the natural log of every observation, for a particular yr.

(2) find $\bar{x} = \frac{\Sigma \ln x}{n}$

(3) find $s = \sqrt{\frac{\Sigma(\ln x)^2 - \frac{(\Sigma \ln x)^2}{n}}{n-1}}$

(4) construct confidence interval using:

A) lower bound $= \bar{x} - \frac{ts}{\sqrt{n}}$

B) upper bound $= \bar{x} + \frac{ts}{\sqrt{n}}$

Where t=table, t-value chosen to yield an approximate 90-95% family confidence

(5) convert back to original concentration form by doing:

A) new lower bound = $e^{\text{lower bound}}$

B) new upper bound = $e^{\text{upper bound}}$

Each confidence interval for each year is then inspected for any overlaps. Overlapping years indicate those years to be insignificantly different whereas non-overlapping years indicate significant shifts in the geometric mean concentrations. The relative locations of the intervals along a real number line indicates whether or not the concentrations are increasing or decreasing.

AIR QUALITY NON-ATTAINMENT AREAS

On March 3, 1978 the Federal Register set forth the attainment status of all states in relation to the national ambient air quality standards (NAAQS). Table 26 indicates, on a state by state, pollutant by pollutant basis the attainment status of every area as submitted by each of the appropriate state agencies in Region VIII and approved, or as designated by the Environmental Protection Agency. No distinctions have been made as to the severity of the violations recorded in the areas designated by nonattainment in this table. Current status (1978) for each county containing a nonattainment area in Region VIII is graphically described on annotated maps in the section dealing with state summaries.

TABLE 26.

EPA NON-ATTAINMENT AREAS IN REGION VIII
FEDERAL REGISTER - MARCH 3, 1978

		TSP	SO_2	NO_2	CO	O_x
Montana	Colstrip Area	P				
	City of Columbia Falls	P				
	City of Missoula	P				
	Missoula Area	S				
	Billings Area	S				
	Great Falls Area	S				
	Butte Area	S				
	East Helena Area	S	PS			
	Laurel Area		P			
	Anaconda Area		PS			
	City of Billings				P	
	Yellowstone County					P
	Rosebud County					P
So. Dak.	Rapid City Area	P				
Utah	Davis County	S				P
	Salt Lake County	P	PS		P	P
	Utah County	P				P
	Weber County	P				P
	City of Price	P				
	Cedar City	S	PS			
	Tooele County		PS			
	Uintah County					P
	City of Bountiful				P	
	City of Ogden				P	
	City of Provo				P	
Wyoming	Trona Industrial Area	P				
	Sweetwater County					
Colo.	Larimer-Weld designated area	P				P
	Denver Designated Area	P		P	P	P
	Colo. Springs 3-C	P			P	
	Pueblo 3-C	P				
	Mesa Designated Area	P				
	El Paso County					P
	Ft. Collins-Greeley				P	

P - Does not meet primary standard
S - Does not meet secondary standard

SECTION V

STATE AIR QUALITY SUMMARIES

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STATE AIR QUALITY SUMMARIES

General Description

The following three graphics appear for each state summary that is contained in this section:

1. Number of Days that the Primary Standard or Alert Level was Exceeded.

A bar chart compares 1976, 1977, and 1978 data. Primary standard and alert violations are recorded for the worst site in the county. For those pollutants reporting only yearly average primary standard violations or those reporting no violations, the county was omitted. If no data or insufficient data (75% of all possible data) were indicated, the county was omitted. One or more primary standard daily and/or alert level exceedences is shown even though more than one primary level concentration is required for a primary standard violation.

2. Status and Trends in Air Quality

A county chart showing current status and trends by pollutant for the worst station in the county. If no data or insufficient data were available in the county, arrows were not shown. Status was determined using 1978 data. Counties with primary standard and/or alert level exceedences are shown. Trends were determined by comparing the geometric means of 1976, 1977, and 1978 data. Ozone status is based on a 3-year average of 1 hour primary level violations.

3. Non-Attainment Areas

The status of counties containing non-attainment areas is shown by parameter. If no indication is given, the county did not have a non-attainment area designation in the March 3, 1978, Federal Register non-attainment area list. In some cases it appears that the status has changed in certain of these non-attainment areas.

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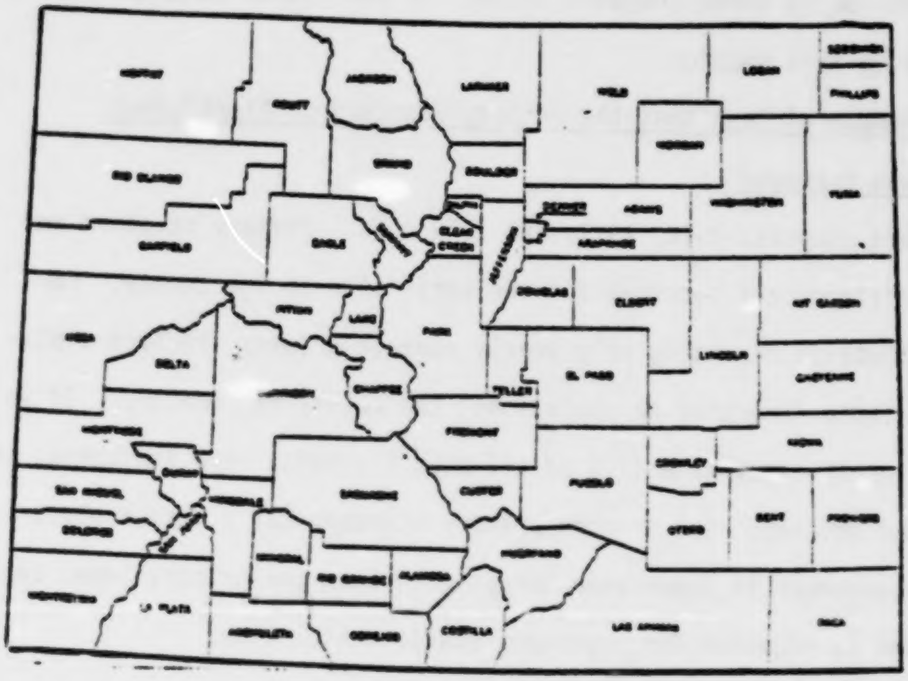

MOFFAT
ROUTT
JACKSON
LARIMER
WELD
LOGAN
SEDGWICK
PHILLIPS
MORGAN
RIO BLANCO
GRAND
BOULDER
GILPIN
DENVER
ADAMS
WASHINGTON
YUMA
GARFIELD
EAGLE
SUMMIT
CLEAR CREEK
JEFFERSON
ARAPAHOE
DOUGLAS
ELBERT
KIT CARSON
MESA
PITKIN
LAKE
PARK
DELTA
GUNNISON
CHAFFEE
TELLER
EL PASO
LINCOLN
CHEYENNE
MONTROSE
FREMONT
KIOWA
OURAY
SAN MIGUEL
HINSDALE
SAGUACHE
CUSTER
PUEBLO
CROWLEY
SAN JUAN
DOLORES
MINERAL
OTERO
BENT
PROWERS
HUERFANO
RIO GRANDE
ALAMOSA
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA

COLORADO

TABLE 27.

STATIONS USED FOR TRENDS AND/OR STATUS DETERMINATION

COLORADO

County	TSP	SO_2	NO_2	CO	O_x
Adams	060020001F01	062210001F01	062210001F01	062210001F01	062210001F01
Alamosa	060040001F01				
Arapahoe	060780001F01				
Archuleta	060100001F01				
Boulder	060200001F01				
Clear Creek	060360001F01				
Delta	060540001F01				
Denver	060580002F01	060580002F01	060580002A05	060580010F01	060580009F01
Douglas	060660001F01				
Eagle	060700001F01				
El Paso	060380004F01			060380004F01	060380004F01
Fremont	060800001F01				
Garfield	060880001F01				
Gunnison	061040002F01				
Huerfano	062180001F01				
Jefferson	060720001F01	060120001F01		060120001F01	060120001F01
La Plata	060680003F01				
Larimer	061480002F01				
Las Animas	062160002F01				
Logan	062080001F01				
Mesa	060980010F01				
Moffat	060480001F01				
Montezuma	061530003F03				
Montrose	061620001F01				

TABLE 27 (CONTINUED)

COLORADO

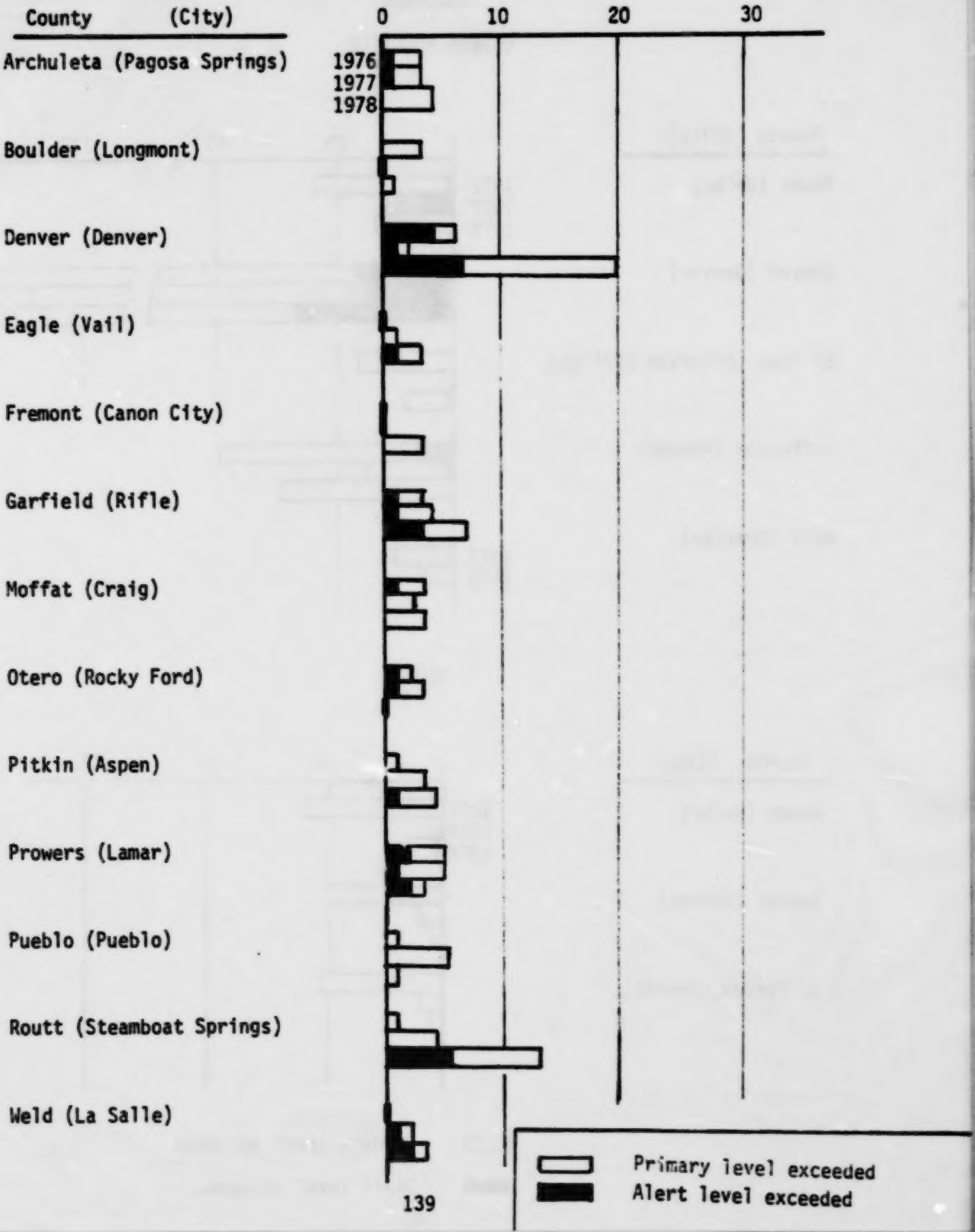
County	TSP	SO_2	NO_2	CO	Ox
Morgan	060280001F01				
Otero	061900001F01				
Pitkin	061780001F01				
Prowers	061280001F01				
Pueblo	061820003F01				
Routt	061920003F01				
Welds	062220004F01			061000C05F01	061000005F01

NUMBER OF DAYS THAT PRIMARY STANDARD OR ALERT LEVEL WAS EXCEEDED

(Days/Year)

COLORADO

TOTAL SUSPENDED PARTICULATES

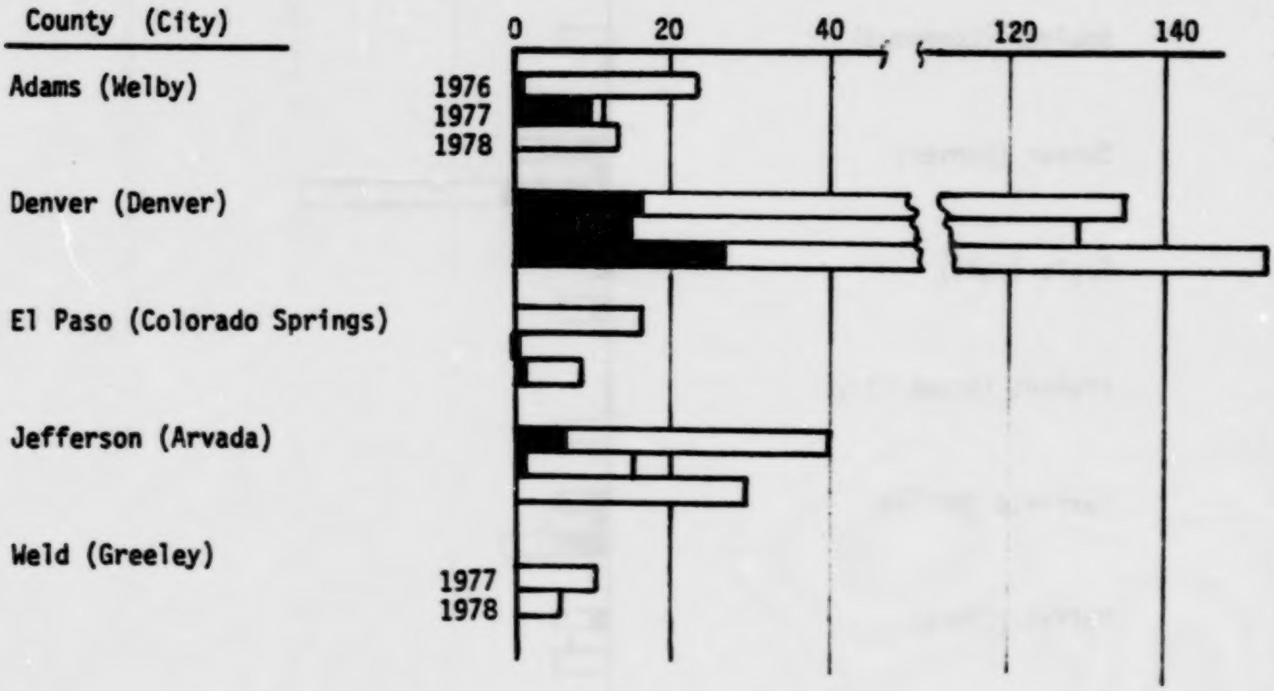


NUMBER OF DAYS THAT PRIMARY STANDARD OR ALERT LEVEL WAS EXCEEDED

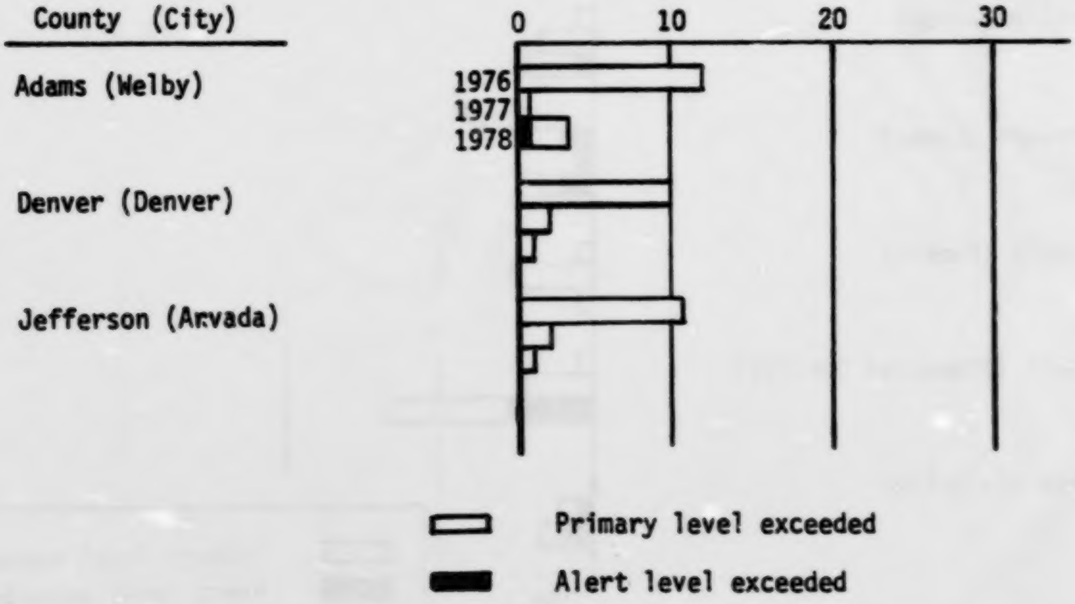
(Days/Year)

COLORADO

CARBON MONOXIDE



OZONE



STATUS AND TRENDS IN AIR QUALITY

COLORADO

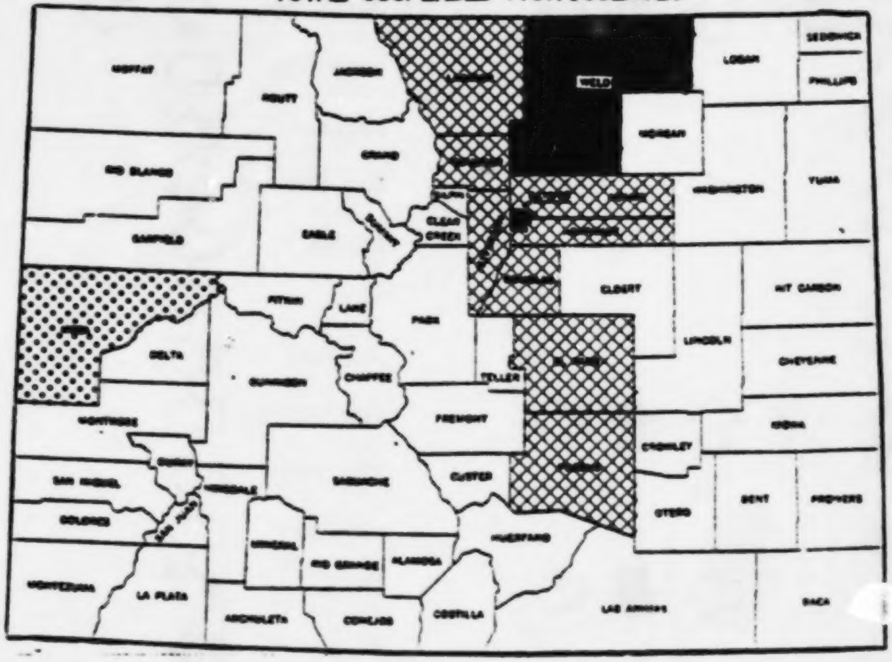
County	TSP	SO_2	NO_2	CO	Ox (ozone)
Adams	▣⇨[a]	⇨	⇧	▣⇩	▣⇧
Alamosa	⇩				
Arapahoe	▣⇨[a]				
Archuleta	▣⇨				
Boulder	▣⇨[a]				
Clear Creek	⇨				
Delta	▣⇨[a]				
Denver	⬆	⇧	⇧	⬆	▣⇨
Douglas	▣⇨[a]				
Eagle	➡				
El Paso	▣⇨[a]		⇨	⬇	⇨
Fremont	▣⇧				
Garfield	➡				
Gunnison	▣⇨[a]				
Huerfano	⇩				

County	TSP	SO_2	NO_2	CO	Ox (ozone)
Jefferson	▣⇧[a]	⇨		▣⇨	▣⇨
La Plata	⇨				
Larimer	▣⇨[a]				
Las Animas	⇩				
Logan	⇨				
Mesa	⇨				
Moffat	▣⇨				
Montezuma	⇨				
Montrose	⇨				
Morgan	⇨				
Otero	▣⇨[a]				
Pitkin	➡				
Prowers	➡				
Pueblo	▣⇨[a]				
Routt	➡				
Weld	➡			▣⇨	⇨

☐	No evidence standard exceeded
▣	Exceeds primary standard
■	**Exceeds alert level**
⇧	Increasing trend (deterioration)
⇨	No apparent trend
⇩	Decreasing trend (improvement)

a/ Status Based on Annual Mean Only

AIR QUALITY STATUS - 1978
COLORADO -
Non-Attainment Areas
Total Suspended Particulates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ROUTT
JACKSON
LARIMER
WELD
LOGAN
SEDGWICK
PHILLIPS
MORGAN
RIO BLANCO
GRAND
GILPIN
CLEAR CREEK
ADAMS
ARAPAHOE
GARFIELD
EAGLE
SUMMIT
JEFFERSON
DOUGLAS
ELBERT
WASHINGTON
YUMA
KIT CARSON
MESA
PITKIN
LAKE
PARK
LINCOLN
DELTA
GUNNISON
CHAFFEE
TELLER
EL PASO
CHEYENNE
MONTROSE
FREMONT
KIOWA
CROWLEY
OURAY
HINSDALE
SAGUACHE
CUSTER
PUEBLO
SAN MIGUEL
DOLORES
SAN JUAN
MINERAL
RIO GRANDE
ALAMOSA
OTERO
BENT
PROWERS
HUERFANO
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA

▨	Insufficient Data (less than 75% of maximum possible observations)
░	No Evidence Primary Standard Exceeded
▦	Primary Standard Exceeded
■	Alert Standard Exceeded

A non-attainment area is in part or all of annotated counties.

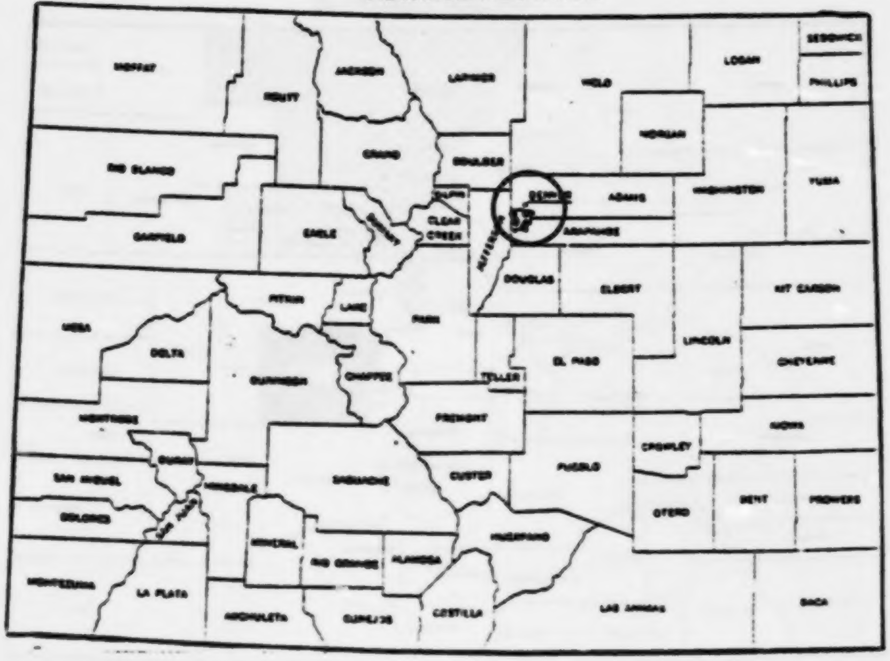
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

COLORADO -

NON-ATTAINMENT AREAS

NITROGEN DIOXIDE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JACKSON
LARIMER
WELD
LOGAN
SEDGWICK
PHILLIPS
MORGAN
RIO BLANCO
GRAND
BOULDER
GILPIN
DENVER
ADAMS
WASHINGTON
YUMA
GARFIELD
EAGLE
SUMMIT
CLEAR CREEK
JEFFERSON
ARAPAHOE
DOUGLAS
ELBERT
KIT CARSON
PITKIN
LAKE
PARK
MESA
DELTA
GUNNISON
CHAFFEE
TELLER
EL PASO
LINCOLN
CHEYENNE
MONTROSE
FREMONT
KIOWA
OURAY
SAN MIGUEL
HINSDALE
SAGUACHE
CUSTER
PUEBLO
CROWLEY
DOLORES
SAN JUAN
OTERO
BENT
PROWERS
MINERAL
RIO GRANDE
ALAMOSA
HUERFANO
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA

▨	Insufficient Data (less than 75% of maximum possible observations)
▒	No Evidence Primary Standard Exceeded
▦	Primary Standard Exceeded
■	Alert Standard Exceeded

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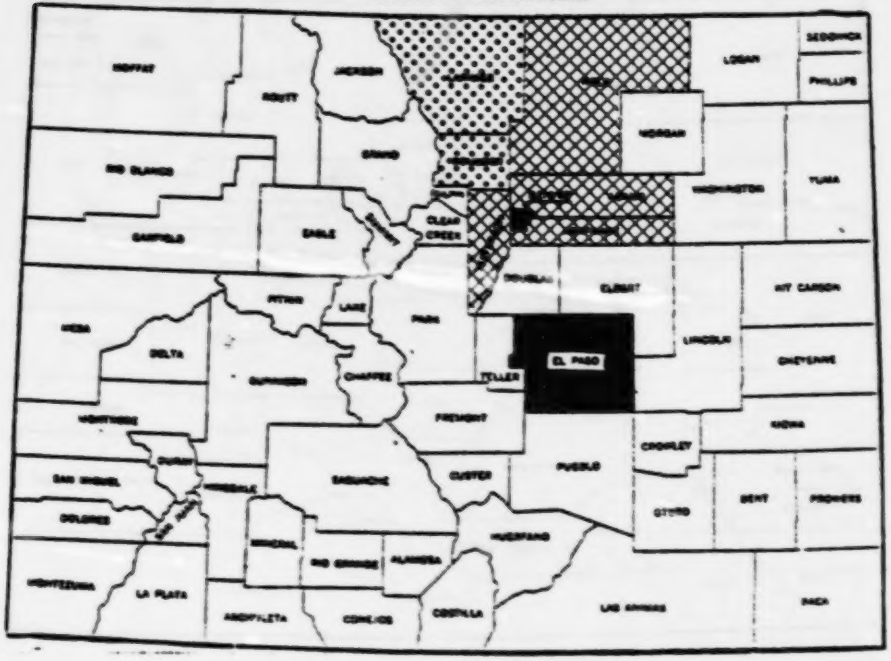
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

COLORADO -

NON-ATTAINMENT AREAS

CARBON MONOXIDE


MOFFAT
ROUTT
JACKSON
LOGAN
MORGAN
RIO BLANCO
GRAND
GARFIELD
EAGLE
CLEAR CREEK
DOUGLAS
ELBERT
KIT CARSON
MESA
LAKE
PARK
DELTA
GUNNISON
CHAFFEE
TELLER
EL PASO
LINCOLN
FREMONT
CROWLEY
SAGUACHE
CUSTER
PUEBLO
OTERO
BENT
HUERFANO
LA PLATA
COSTILLA
LAS ANIMAS
BACA

▨ Insufficient Data (less than 75% of maximum possible observations)

░ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

A non-attainment area is in part or in all of annotated counties.

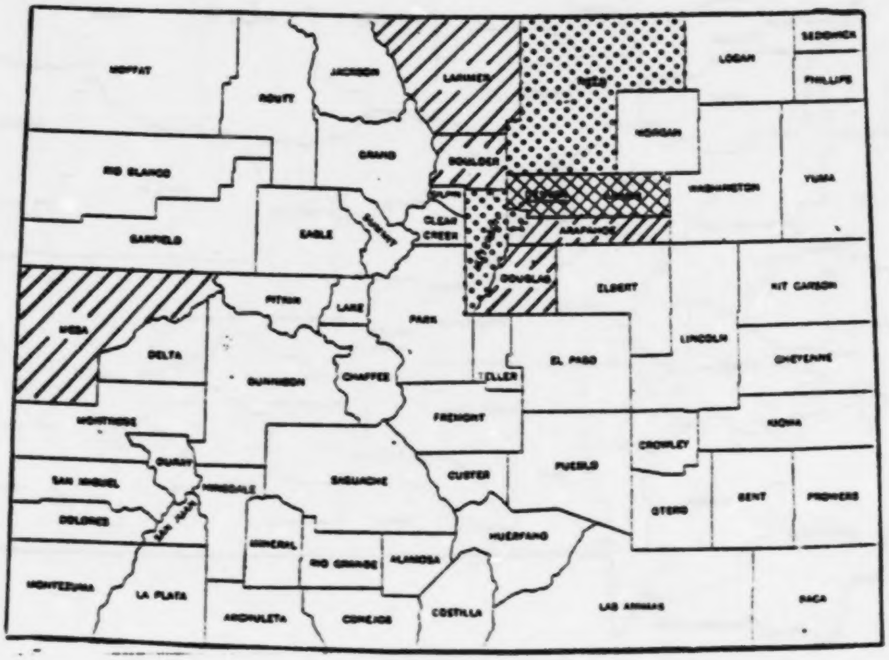
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

COLORADO -

NON-ATTAINMENT AREAS

OZONE


MOFFAT
ROUTT
JACKSON
LARIMER
WELD
LOGAN
SEDGWICK
PHILLIPS
MORGAN
RIO BLANCO
GRAND
BOULDER
WASHINGTON
YUMA
ADAMS
ARAPAHOE
CLEAR CREEK
SUMMIT
GARFIELD
EAGLE
JEFFERSON
DOUGLAS
ELBERT
KIT CARSON
MESA
PITKIN
LAKE
PARK
DELTA
GUNNISON
CHAFFEE
TELLER
EL PASO
LINCOLN
CHEYENNE
MONTROSE
FREMONT
KIOWA
CROWLEY
OURAY
SAN MIGUEL
HINSDALE
SAGUACHE
CUSTER
PUEBLO
DOLORES
SAN JUAN
MINERAL
RIO GRANDE
ALAMOSA
HUERFANO
OTERO
BENT
PROWERS
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA

▨ Insufficient Data (less than 75% of maximum possible observations)

⁘ No Evidence Primary Standard Exceeded

▩ .12 PPM Level Exceeded

■ .20 PPM Level Exceeded

A non-attainment area is in part or all of annotated counties.

The worst station in the county is used to represent the county.

LINCOLN
GLACIER
TOOLE
LIBERTY
HILL
DANIELS
SHERIDAN
FLATHEAD
PONDERA
BLAINE
PHILLIPS
VALLEY
ROOSEVELT
TETON
CHOUTEAU
SANDERS
LAKE
MC CONE
RICHLAND
MINERAL
CASCADE
GARFIELD
DAWSON
JUDITH BASIN
FERGUS
PETROLEUM
MISSOULA
LEWIS AND CLARK
POWELL
PRAIRIE
WIBAUX
MEAGHER
WHEATLAND
GOLDEN VALLEY
MUSSELSHELL
FALLON
GRANITE
TREASURE
ROSEBUD
CUSTER
RAVALLI
JEFFERSON
BROADWATER
DEER LODGE
SILVER BOW
SWEET GRASS
YELLOWSTONE
GALLATIN
STILLWATER
PARK
CARTER
BIG HORN
POWDER RIVER
MADISON
CARBON
BEAVERHEAD

MONTANA

TABLE 28.

STATIONS USED FOR TRENDS AND/OR STATUS DETERMINATION

MONTANA

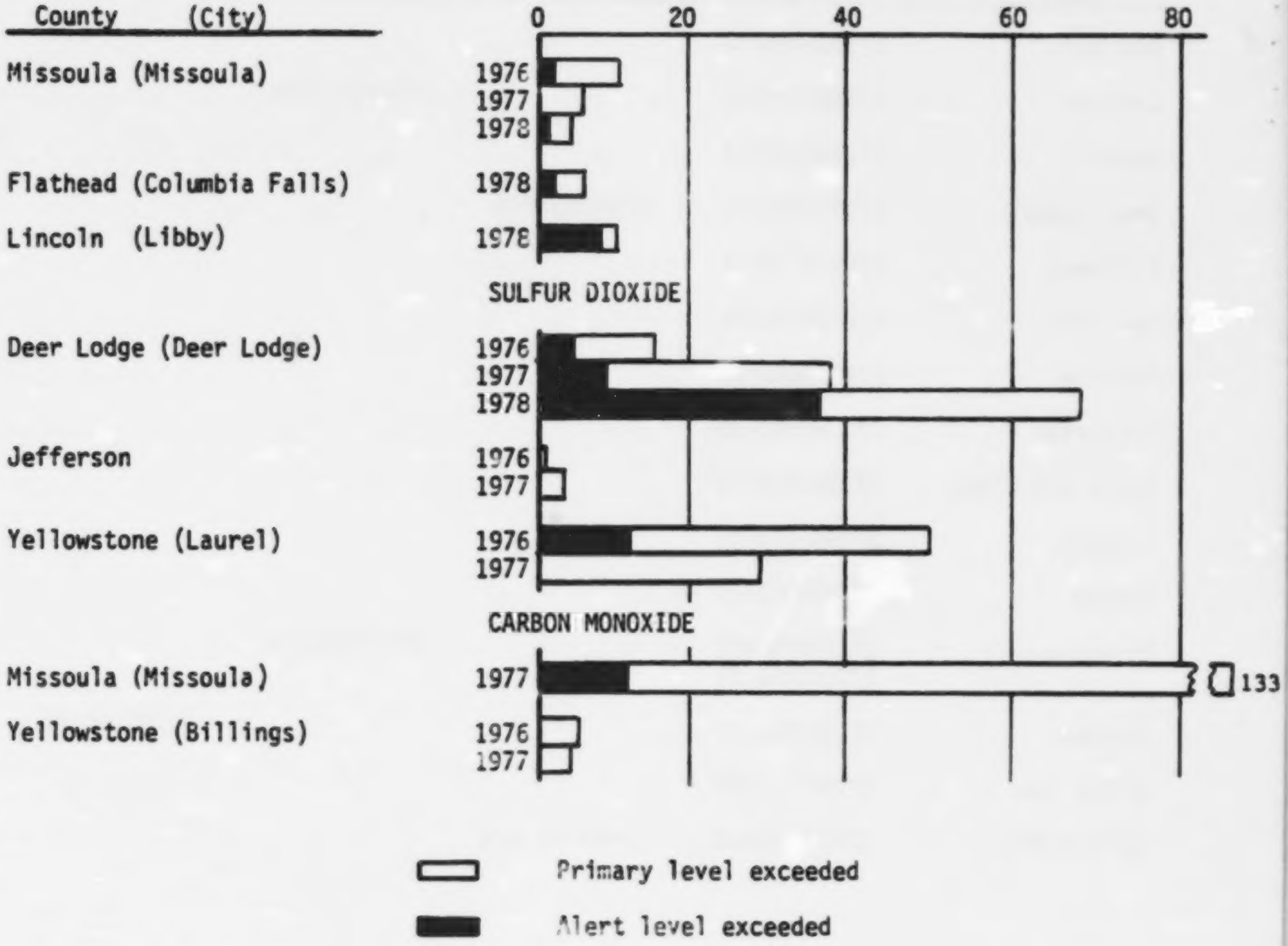
County	TSP	SO_2	CO	O_x
Big Horn	270006010F03			
Cascade	270660009G01		270660015F01	
Daniels	270340003F03			
Deer Lodge	270400004F02	270400004F02		
Flathead	270270005F01			
Gallatin	270120001F01			
Granite	270640005F02			
Jefferson	270760903F02			
Lewis and Clark	270860002F02			
Lincoln	270900010F01			
McCone	270980001F03			
Missoula	271100001G01 271100019F01		271080003F01	
Rosebud	271360026P03			270310101A08
Silver Bow	271480015F02			
Yellowstone	270080008G01	270840009G02		

NUMBER OF DAYS THAT PRIMARY STANDARD OR ALERT LEVEL WAS EXCEEDED

(Days/Year)

MONTANA

TOTAL SUSPENDED PARTICULATES



STATUS AND TRENDS IN AIR QUALITY

MONTANA

County	TSP	SO_2	County	TSP	SO_2
Big Horn	⇨		Lewis & Clark	⇨	
Cascade	⇩		Missoula	➡	
Deer Lodge	⇩	⬆	Rosebud	⇨	
Granite	⇨		Silver Bow	⇨	
Jefferson	⇨		Yellowstone	⇨	

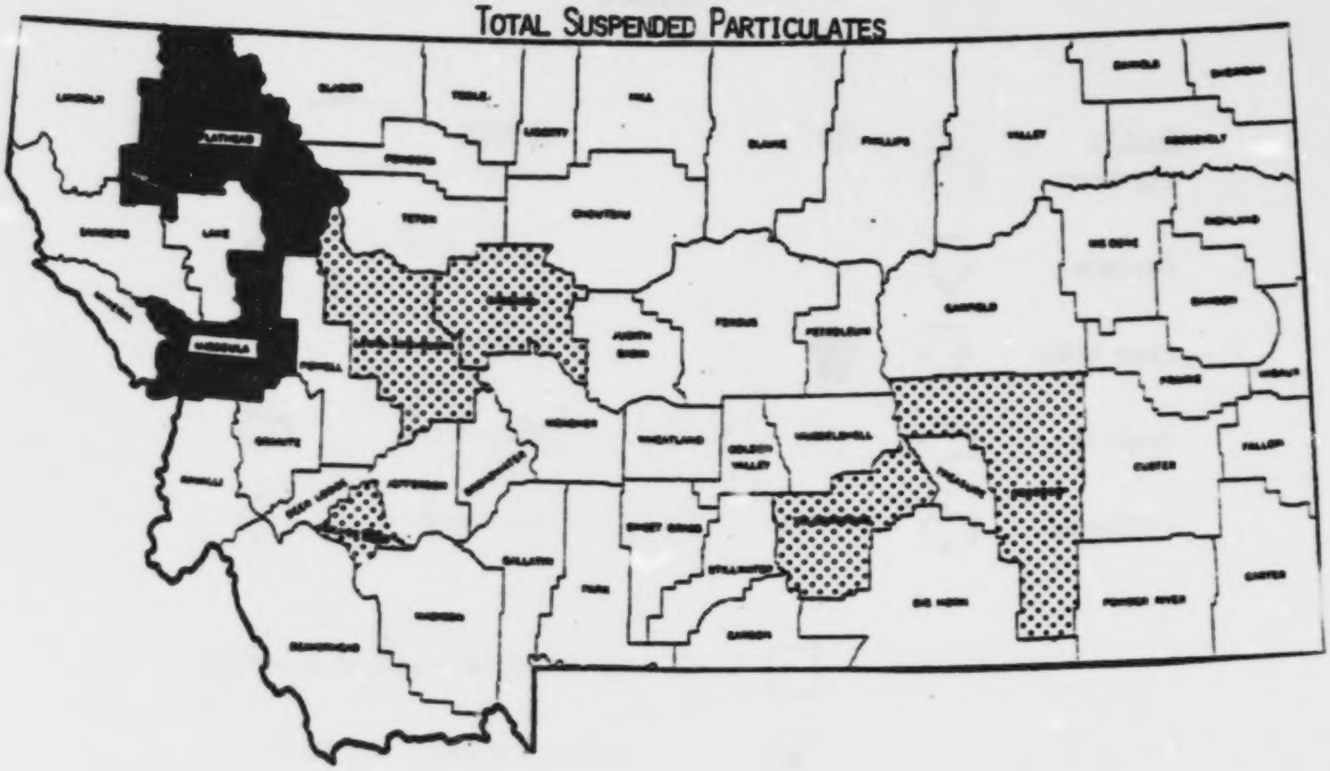
☐	No evidence standard exceeded
▣	Exceeds primary standard
■	Exceeds alert level
⇧	Increasing trend (deterioration)
⇨	No apparent trend
⇩	Decreasing trend (improvement)

AIR QUALITY STATUS - 1978

MONTANA -

NON-ATTAINMENT AREAS

TOTAL SUSPENDED PARTICULATES



▨ Insufficient Data (less than 75% of maximum possible observations)

░ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

A non-attainment area is in part or all of annotated counties.

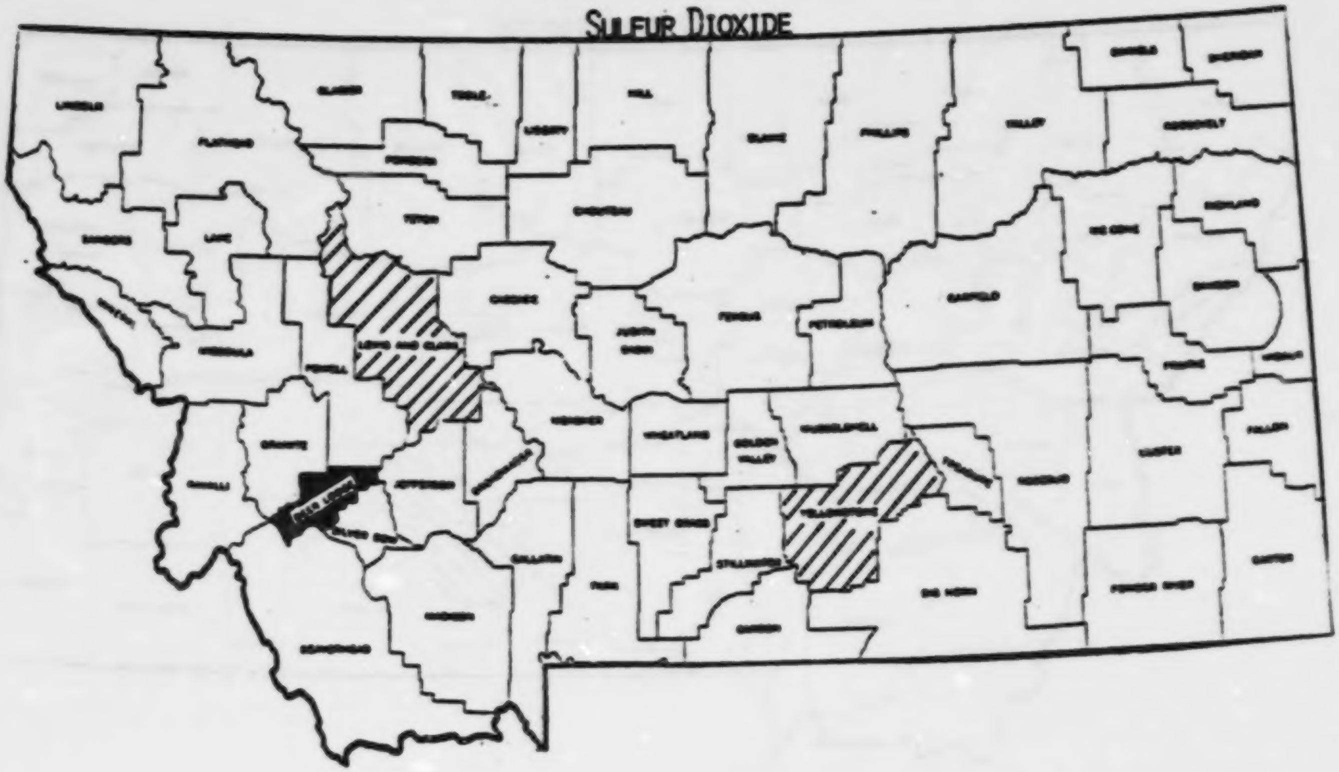
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

MONTANA -

NON-ATTAINMENT AREAS

SULFUR DIOXIDE


LEWIS AND CLARK
DEER LODGE
YELLOWSTONE
WHEATLAND
GOLDEN VALLEY
SWEET GRASS
BIG HORN
PARK

▨ Insufficient Data (less than 75% of maximum possible observations)

▭ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

A non-attainment area is in part or all of annotated counties.

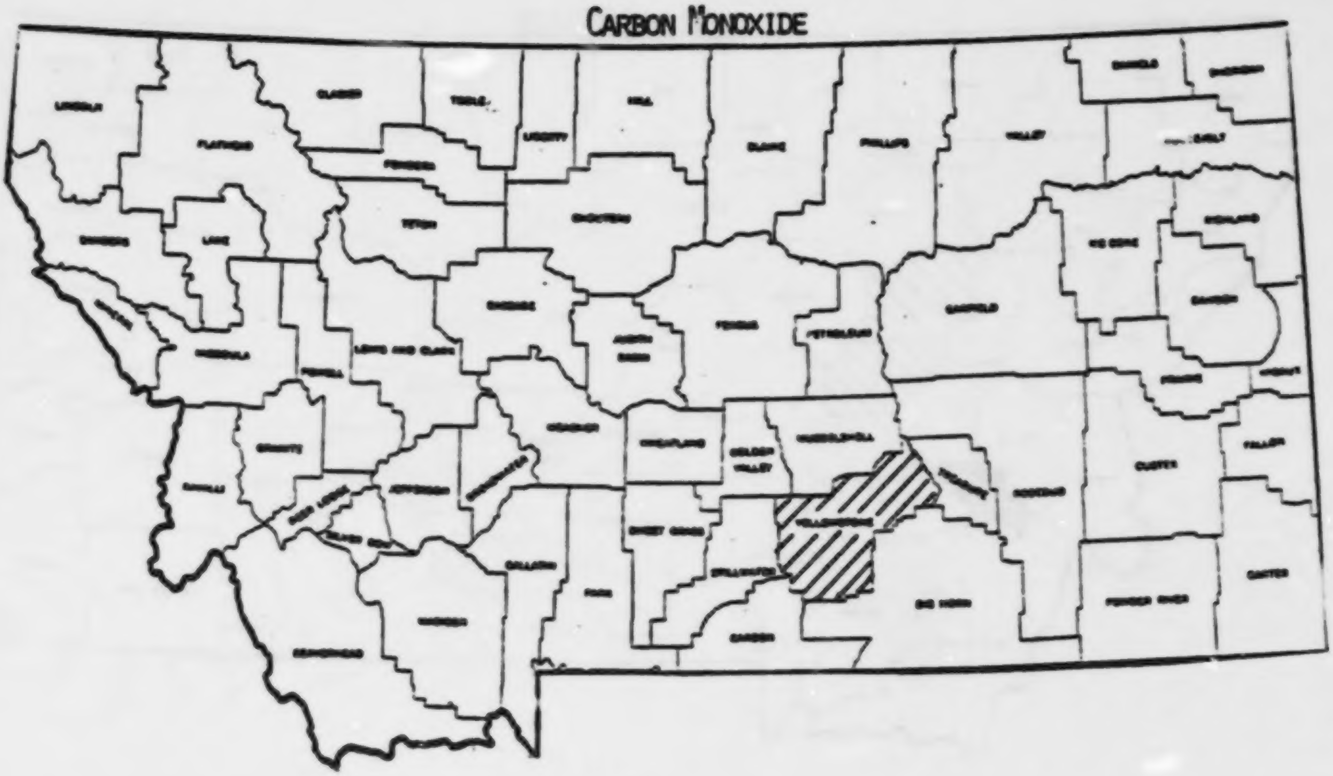
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

MONTANA -

NON-ATTAINMENT AREAS

CARBON MONOXIDE



▨ Insufficient Data (less than 75% of maximum possible observations)

░ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

A non-attainment area is in part or all of annotated counties.

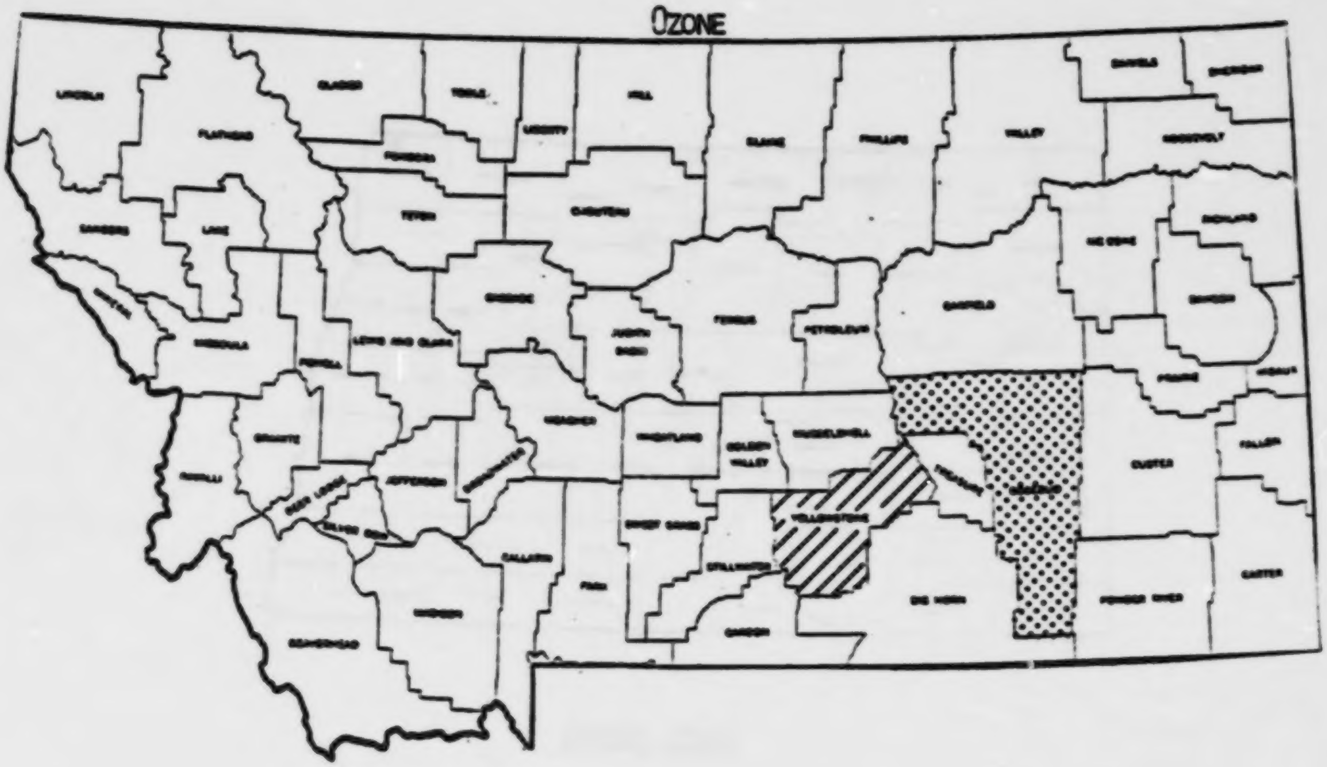
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

MONTANA -

NON-ATTAINMENT AREAS

OZONE



▨ Insufficient Data (less than 75% of maximum possible observations)

▒ No Evidence Primary Standard Exceeded

▦ .12 PPM Level Exceeded

■ .20 PPM Level Exceeded

A non-attainment area is in part or all of annotated counties.

The worst station in the county is used to represent the county.

DIVIDE
BURKE
RENVILLE
BOTTINEAU
ROLETTE
TOWNER
CAVALIER
PEMBINA
WILLIAMS
MOUNTRAIL
WARD
MC HENRY
PIERCE
BENSON
RAMSEY
WALSH
MC KENZIE
NELSON
GRAND FORKS
MC LEAN
SHERIDAN
WELLS
EDDY
FOSTER
GRIGGS
STEELE
TRAILL
DUNN
MERCER
GOLDEN VALLEY
BILLINGS
OLIVER
BURLEIGH
KIDDER
STUTSMAN
BARNES
CASS
STARK
MORTON
SLOPE
HETTINGER
GRANT
LOGAN
LA MOURE
RANSOM
RICHLAND
EMMONS
BOWMAN
ADAMS
SIOUX
MC INTOSH
DICKEY
SARGENT

NORTH DAKOTA

TABLE 29.

STATIONS USED FOR TRENDS AND/OR STATUS DETERMINATION

NORTH DAKOTA

County	TSP	SO_2	NO_2	O_x
Burley	350100001F01	350200001F03	350100001F01	350200001F03
Bowman	350160001F03			
Cass	350400002F01	350400001F01	350400001F01	
Dunn	350340001F03	350340002F03	350340002F03	
Grand Forks	350480002F01			
Grant	350520001F03	350520001F03	350520001F03	
Hettinger	350560001F03	350560001F03	350560001F03	
McKenzie	350700001F03	350700001F03	350700001F03	
McClane	350720001F03	350720002F03	350720002F03	
Mercer	350760001F01	350760002F03	350760001F01	
Medora	350080001F03			
Morton	350740001F01	350740001F01	350740001F01	
Mountrail	350820001F03			
Oliver	350860001F03	350860001F03	350860001F03	350860001F03
Sheridan	351060001F03			
Stark	351140001F03	351140001F03	351140001F03	

STATUS AND TRENDS IN AIR QUALITY

NORTH DAKOTA

County	TSP	SO_2	NO_2	CO	O_x (ozone)	County	TSP	SO_2	NO_2	CO	O_x(ozone
Billings	⇨					Hettinger		⇨	⇩		
Bowman	⇩					McLean	⇩	⇨	⇨		
Burleigh	⇩		⇨		⇨	Mercer	⇨		⇨		
Cass	⇨	⇨	⇨			Morton	⇨	⇨	⇨		
Dunn	⇨	⇨				Oliver	⇩	⇨	⇨		⇩
Grand Forks	⇨					Stark	⇨		⇨		
Grant	⇨	⇨	⇧			Ward	⇨				

☐ No evidence standard exceeded

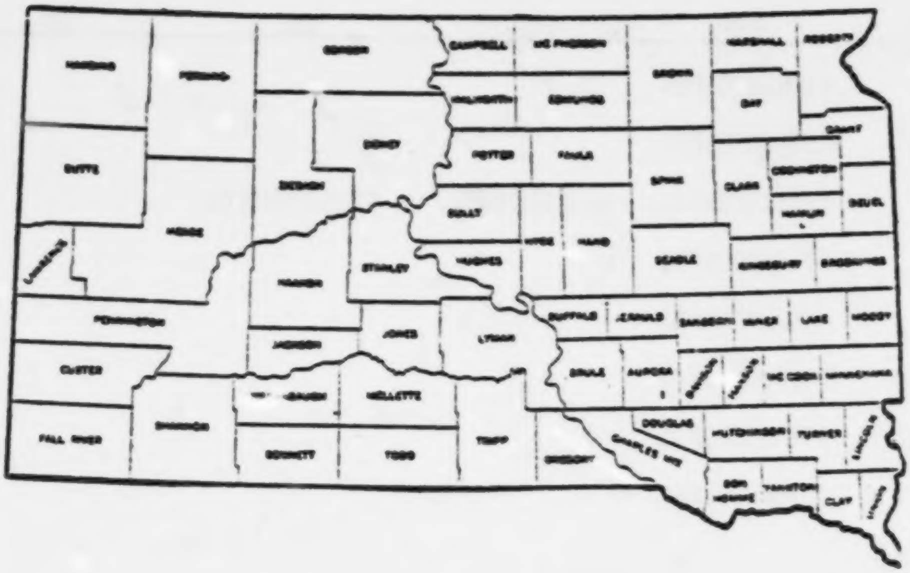
▣ Exceeds primary standard

■ Exceeds alert level

⇧ Increasing trend (deterioration)

⇨ No apparent trend

⇩ Decreasing trend (improvement)


CAMPBELL
MC PHERSON
BROWN
MARSHALL
ROBERTS
DAY
GRANT
POTTER
SPINK
CLARK
CODINGTON
HAMLIN
DEUEL
BUTTE
HAND
KINGSBURY
BROOKINGS
STANLEY
HUGHES
BUFFALO
JERAULD
LAKE
MOODY
PENNINGTON
JONES
LYMAN
CUSTER
AURORA
MC COOK
MELLETTE
FALL RIVER
TODD
TRIPP
GREGORY
DOUGLAS
HUTCHINSON
TURNER
CHARLES MIX
YANKTON
CLAY

SOUTH DAKOTA

TABLE 30.

STATIONS USED FOR TRENDS AND/OR STATUS DETERMINATION

SOUTH DAKOTA

County	TSP	SO_2	NO_2	CO	O_x
Beadle	430820001F01				
Brookings	430140001F01				
Custer	430110001F01	430110001F01	430110001F01		
Hughes	431340001F01				
Perkins	431320001F03				
Pennington	431380001F01				
Minnehaha	431480001P01				
Yankton	431800001F03				

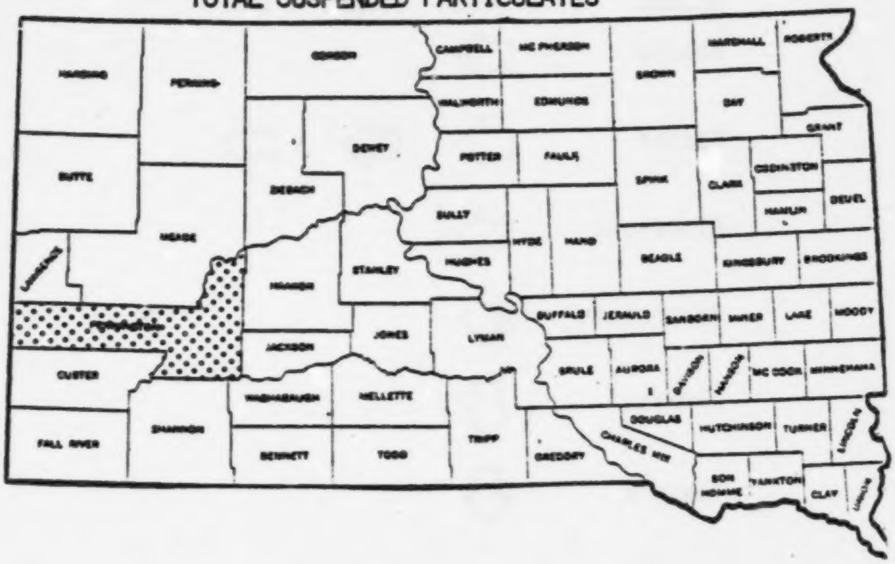
STATUS AND TRENDS IN AIR QUALITY

SOUTH DAKOTA

County	TSP	SO_2	NO_2
Beadle	⇨		
Custer	⇨	⇨	⇨
Minnehaha	⇨		
Pennington	▣⇨		
Perkins	⇩		
Yankton	⇩		

□	No evidence standard exceeded
▣	Exceeds primary standard
■	Exceeds alert level
⇧	Increasing trend (deterioration)
⇨	No apparent trend
⇩	Decreasing trend (improvement)

AIR QUALITY STATUS - 1978
SOUTH DAKOTA -
NON-ATTAINMENT AREAS
TOTAL SUSPENDED PARTICULATES


HARDING
PERKINS
CORSON
CAMPBELL
MC PHERSON
BROWN
MARSHALL
ROBERTS
WALWORTH
EDMUNDS
DAY
GRANT
BUTTE
DEWEY
ZIEBACH
POTTER
FAULK
SPINK
CLARK
CODINGTON
DEUEL
HAMLIN
MEADE
SULLY
HYDE
HAND
BEADLE
KINGSBURY
BROOKINGS
LAWRENCE
STANLEY
HUGHES
HAAKON
PENNINGTON
BUFFALO
JERAULD
SANBORN
MINER
LAKE
MOODY
JONES
LYMAN
JACKSON
CUSTER
BRULE
AURORA
DAVISON
HANSON
MC COOK
MINNEHAHA
WASHABAUGH
MELLETTE
DOUGLAS
HUTCHINSON
TURNER
LINCOLN
FALL RIVER
SHANNON
BENNETT
TODD
TRIPP
GREGORY
CHARLES MIX
BON HOMME
YANKTON
CLAY
UNION

▨	Insufficient Data (less than 75% of maximum possible observations)
░	No Evidence Primary Standard Exceeded
▩	Primary Standard Exceeded
■	Alert Standard Exceeded

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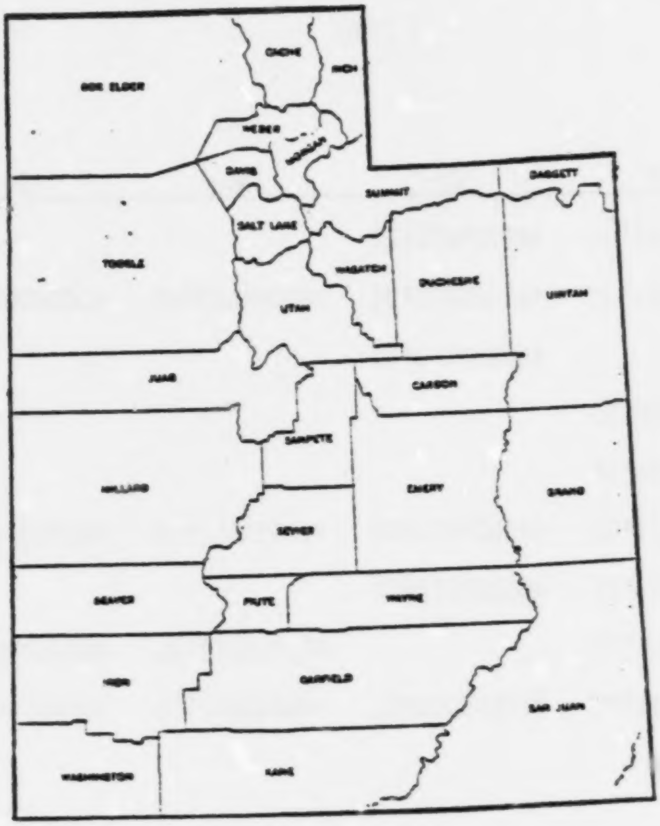
The worst station in the county is used to represent the county.


BOX ELDER
CACHE
RICH
WEBER
MORGAN
DAVIS
SUMMIT
DAGGETT
SALT LAKE
TOOELE
WASATCH
DUCHESNE
UINTAH
UTAH
JUAB
CARBON
SANPETE
MILLARD
EMERY
GRAND
SEVIER
BEAVER
PIUTE
WAYNE
IRON
GARFIELD
SAN JUAN
WASHINGTON
KANE

UTAH

TABLE 31.

STATIONS USED FOR TRENDS AND/OR STATUS DETERMINATION

UTAH

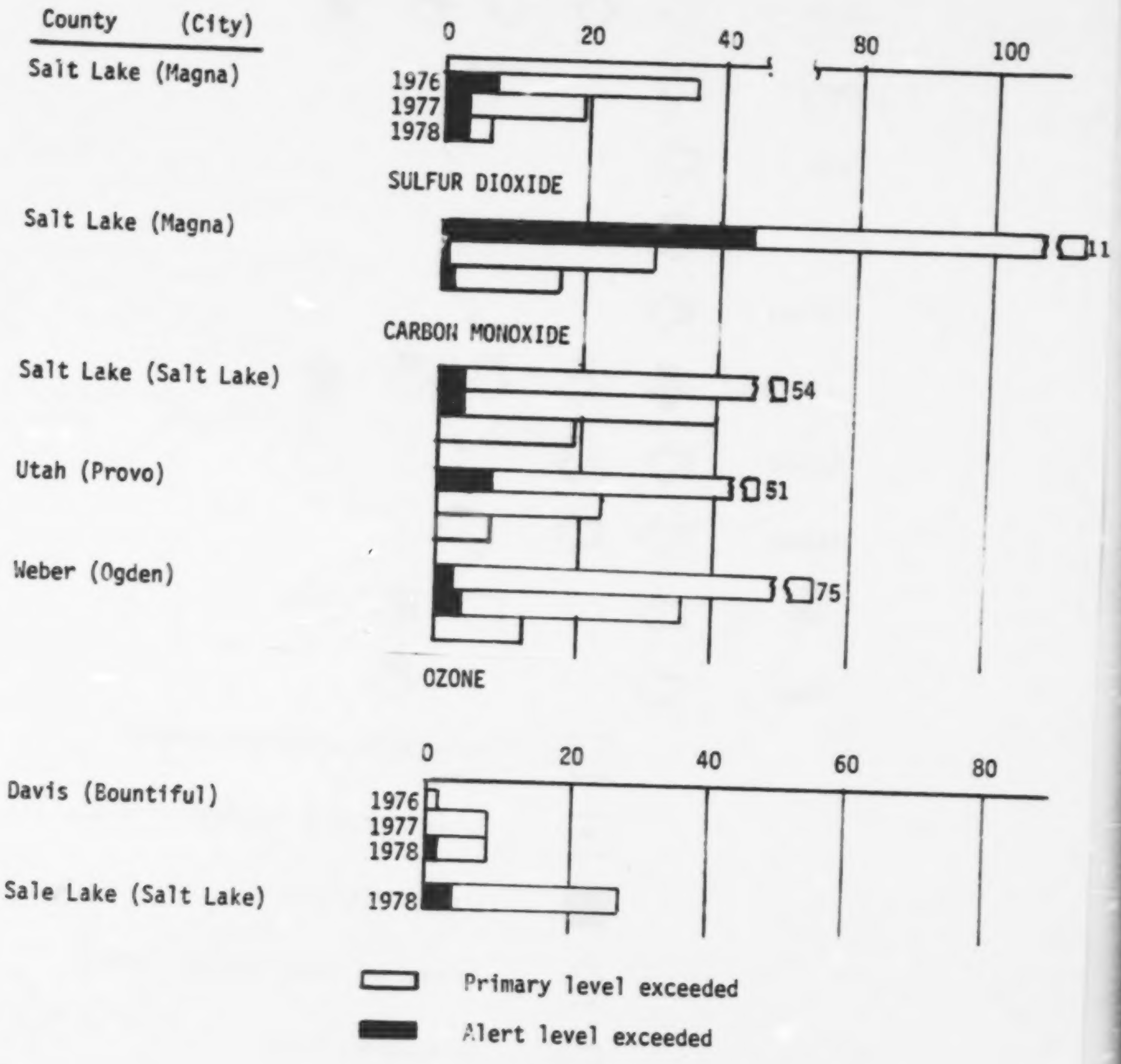
County	TSP	SO_2	NO_2	CO	O_x
Carbon	460780001F01	460780001F01			
Davis	460060001F01	460060001F01	460060001F01	460060001F01	460060001F01
Iron		460160001F01			
Kane	460400002F03				
Millard	460560001F01				
Salt Lake	460520001F02	460520001F02	460920001P01	460920001F01	460920001F01
Tooele	461160001F01	461160001F01			
Utah	461220001F01		460800001F01	460800001F01	460800001F01
Weber	460680001F01	460680001F01	460680001F01	460680001F01	

NUMBER OF DAYS THAT PRIMARY STANDARD OR ALERT LEVEL WAS EXCEEDED

(Days/Year)

UTAH

TOTAL SUSPENDED PARTICULATES



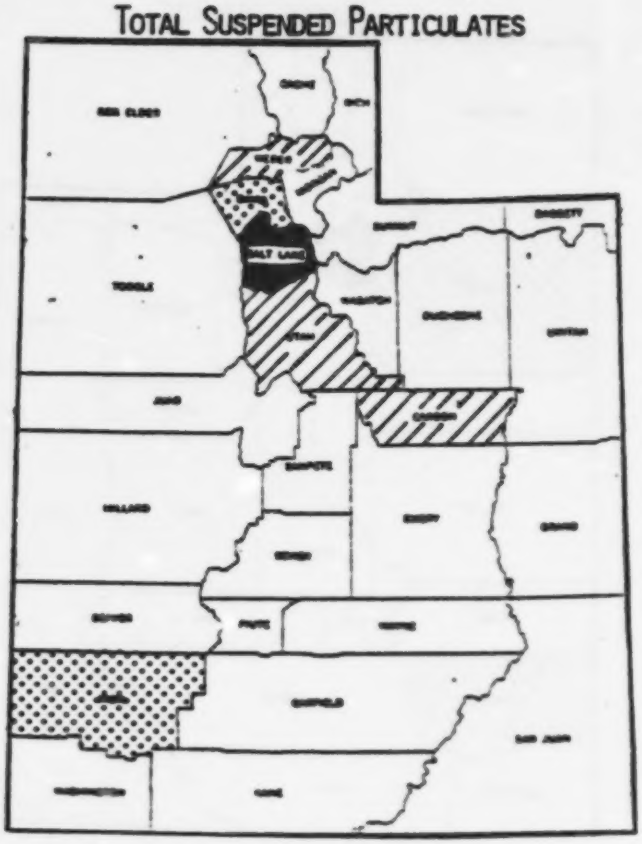
STATUS AND TRENDS IN AIR QUALITY

UTAH

County	TSP	SO_2	NO_2	CO	O_x (ozone)
Davis	⇩	⇩	⇩	▣⇩	▣⇧
Emery	⇨		⇨		
Iron	⇨				
Kane	⇩				
Millard	▣⇨				
Salt Lake	⬇	▣⇩	⇩	▣⇩	⬆
Tooele	⇨	⇩			
Uintah	⇨	⇨			
Utah	⇨		⇨	▣⇨	⇧
Weber	⇨			▣⇩	

□	No evidence standard exceeded
▣	Exceeds primary standard
■	Exceeds alert level
⇧	Increasing trend (deterioration)
⇨	No apparent trend
⇩	Decreasing trend (improvement)

AIR QUALITY STATUS - 1978
UTAH -
NON-ATTAINMENT AREAS
TOTAL SUSPENDED PARTICULATES



▨ Insufficient Data (less than 75% of maximum possible observations)

░ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

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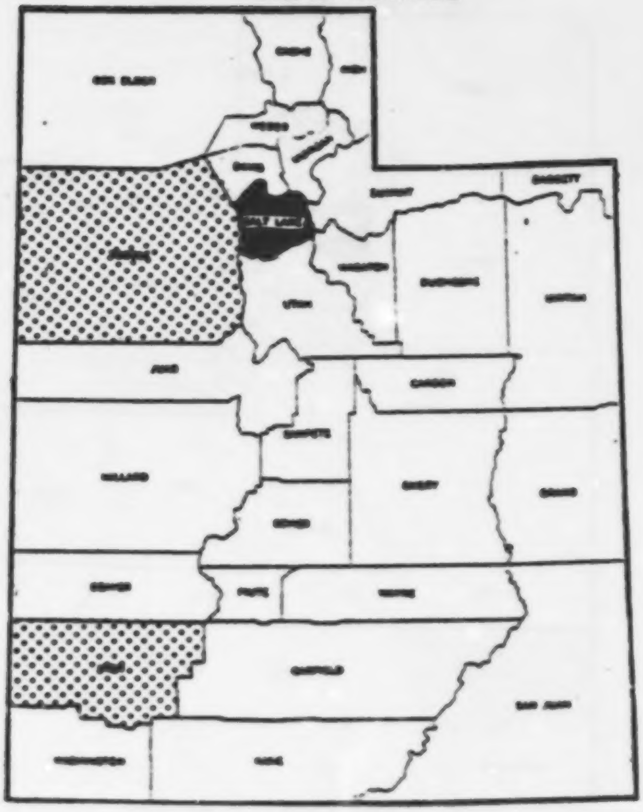
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

UTAH -

NON-ATTAINMENT AREAS

SULFUR DIOXIDE



▨ Insufficient Data (less than 75% of maximum possible observations)

░ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

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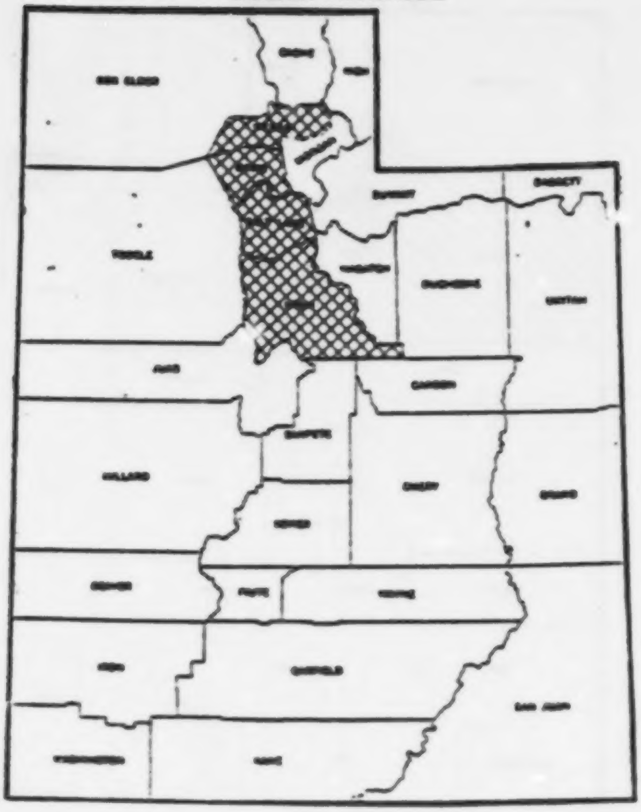
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978

UTAH

NON-ATTAINMENT AREAS

CARBON MONOXIDE



▨ Insufficient Data (less than 75% of maximum possible observations)

░ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

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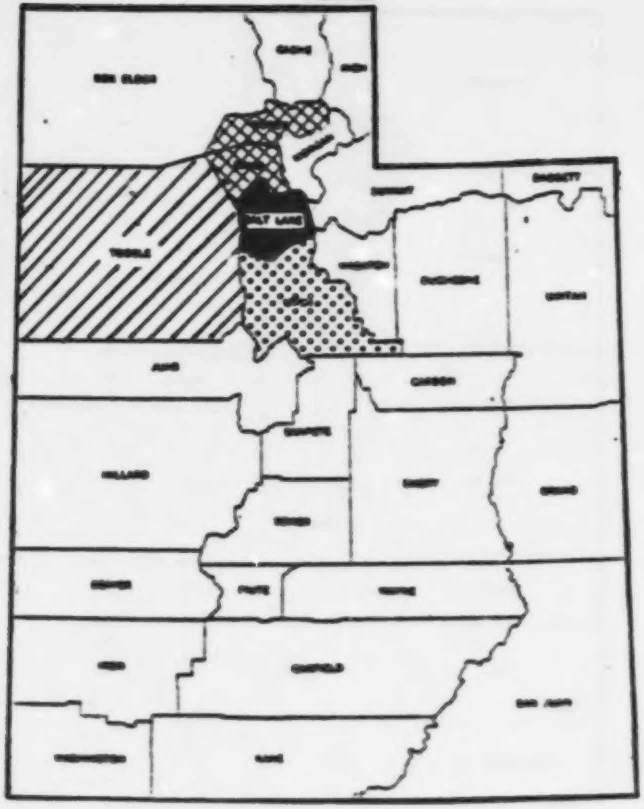
The worst station in the county is used to represent the county.

AIR QUALITY STATUS - 1978
UTAH -
NON-ATTAINMENT AREAS
OZONE



▨ Insufficient Data (less than 75% of maximum possible observations)

░ No Evidence Primary Standard

▩ .12 PPM Level Exceeded

■ .20 PPM Level Exceeded

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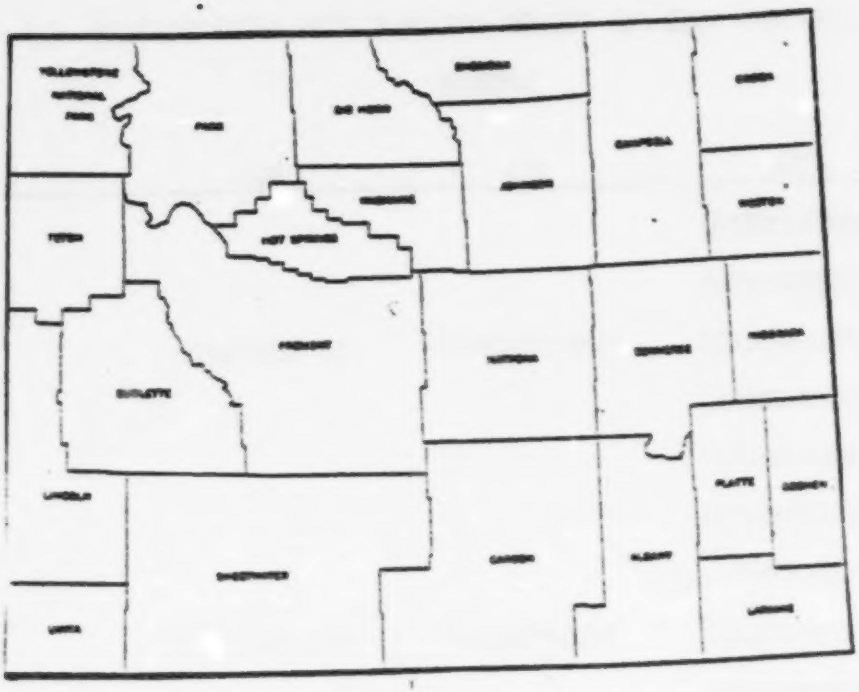

YELLOWSTONE NATIONAL PARK
PARK
BIG HORN
SHERIDAN
CAMPBELL
CROOK
WASHAKIE
JOHNSON
WESTON
HOT SPRINGS
TETON
FREMONT
NATRONA
CONVERSE
NIOBRARA
SUBLETTE
LINCOLN
PLATTE
GOSHEN
SWEETWATER
CARBON
ALBANY
LARAMIE
UINTA

WYOMING

TABLE 32.

STATIONS USED FOR TRENDS AND/OR STATUS DETERMINATION

WYOMING

County	TSP	SO_2	NO_2
Carbon	520580001F01		
Big Horn	520040001F01		
Converse	520180001F03	520180006F03	520180006F03
Crook	520200002F03		
Fremont	520600001F01		
Doskin	520300003F03		
Johnston	520360001F03		
Laramie	520140001F01	520140001F01	520140001F01
Lincoln	520440002F01		
Natrona	520120001F01	520120001F01	520120001F01
Sheridan	520660002F01		
Sublette	520680001F01		
Platte	520830001F01		
Sweetwater	520700001F01		
Teton	520720001F01		
Uinta	520240001F01		
Washakie	520840001F01		
Weston	520820001F03	520820001F03	520820001F03

STATUS AND TRENDS IN AIR QUALITY

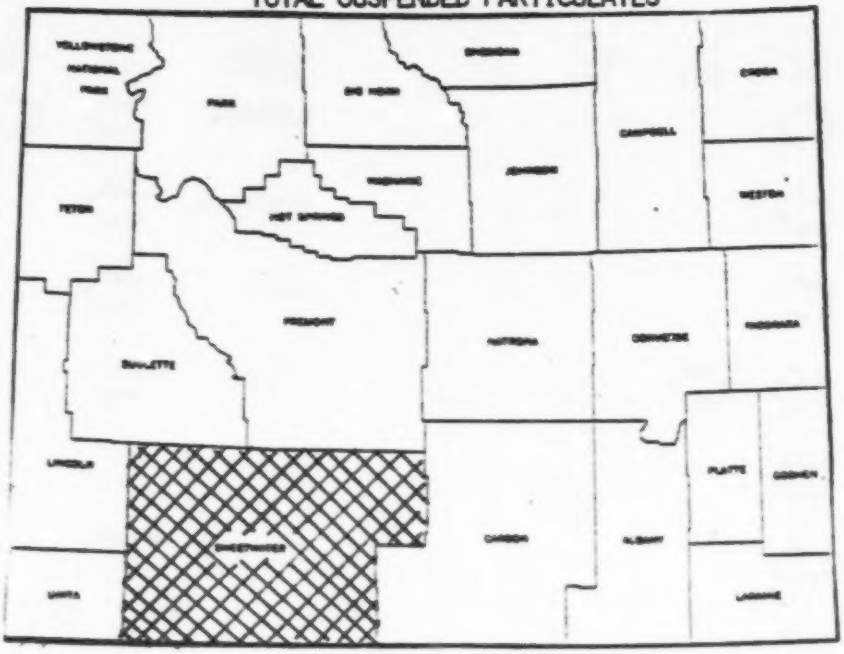
WYOMING

County	TSP	SO_2	NO_2	County	TSP	SO_2	NO_2
Albany	⇨			Natrona	⇨	⇨	
Big Horn	⇨			Niobrara	⇨		
Carbon	⇨			Park	⇨		
Converse	⇨	⇨		Platte	⇨		
Crook	⇨			Sheridan	⇨		
Fremont	⇨			Sublette	⇨		
Goshen	⇨			Sweetwater	▣⇨[a]		⇨
Johnson	⇨			Uinta	⇨		
Laramie	⇨	⇨	⇨	Washakie	⇨		
Lincoln	⇨			Weston	⇨	⇨	

□	No evidence standard exceeded
▣	Exceeds primary standard
■	Exceeds alert level
⇧	Increasing trend (deterioration)
⇨	No apparent trend
⇩	Decreasing trend (improvement)

[a]/ Status Based on Annual Mean Only

AIR QUALITY STATUS - 1978
WYOMING -
NON-ATTAINMENT AREAS
TOTAL SUSPENDED PARTICULATES



▨ Insufficient Data (less than 75% of maximum possible observations)

▭ No Evidence Primary Standard Exceeded

▩ Primary Standard Exceeded

■ Alert Standard Exceeded

A non-attainment area is in part or all of annotated counties.

The worst station in the county is used to represent the county.

APPENDICES

Water

A. Severity Curves for Water Quality Parameters

Air

B. National Ambient Air Quality Standards

C. Breakpoints for Pollutant Standards Index

D. Procedures Used to Determine Status

E. National Aerometric Data Bank - State Inventory by Pollutant

Figure A-1. Severity Curves for Water Quality Parameters.

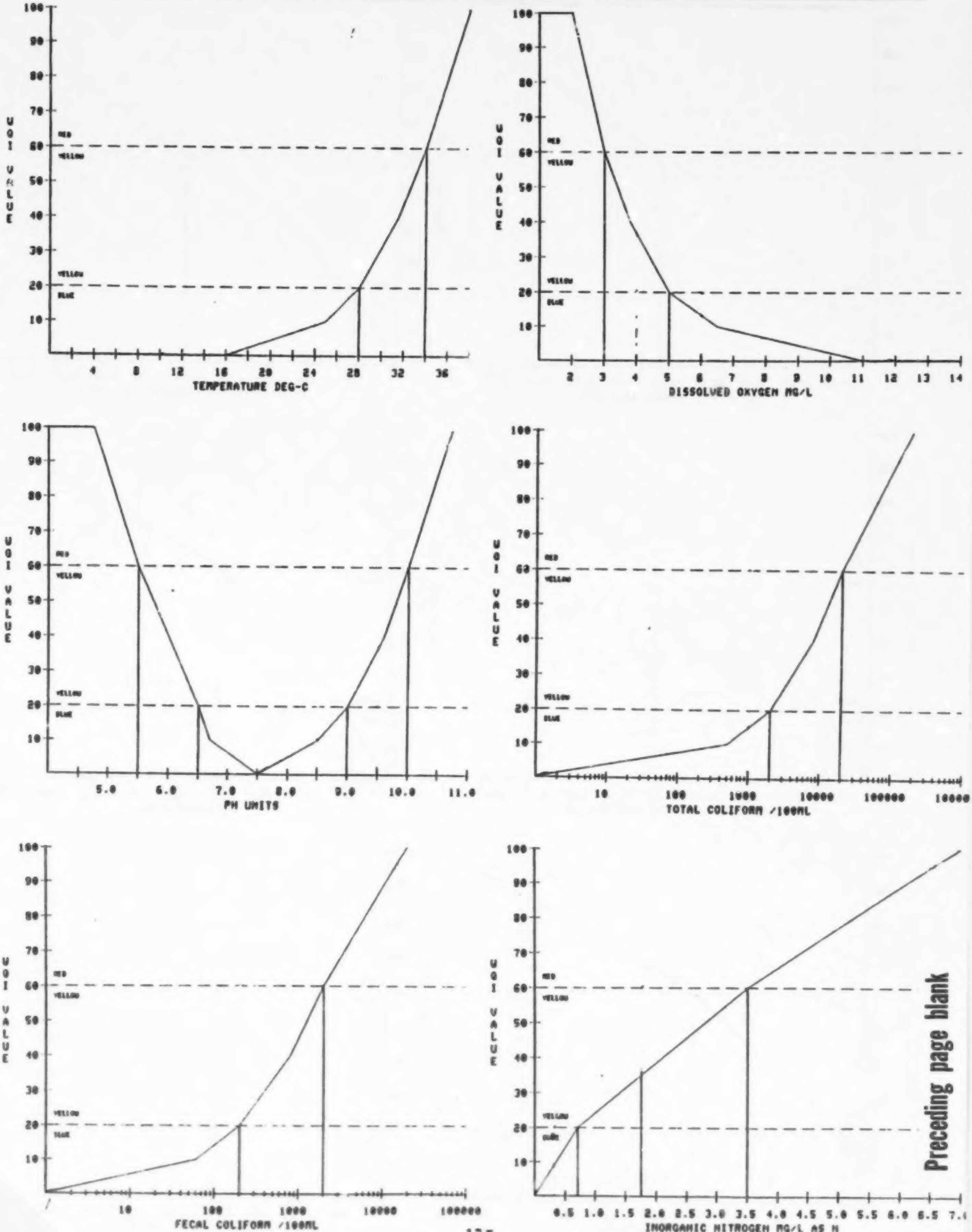


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Figure A-1 (Continued). Severity Curves for Water Quality Parameters.

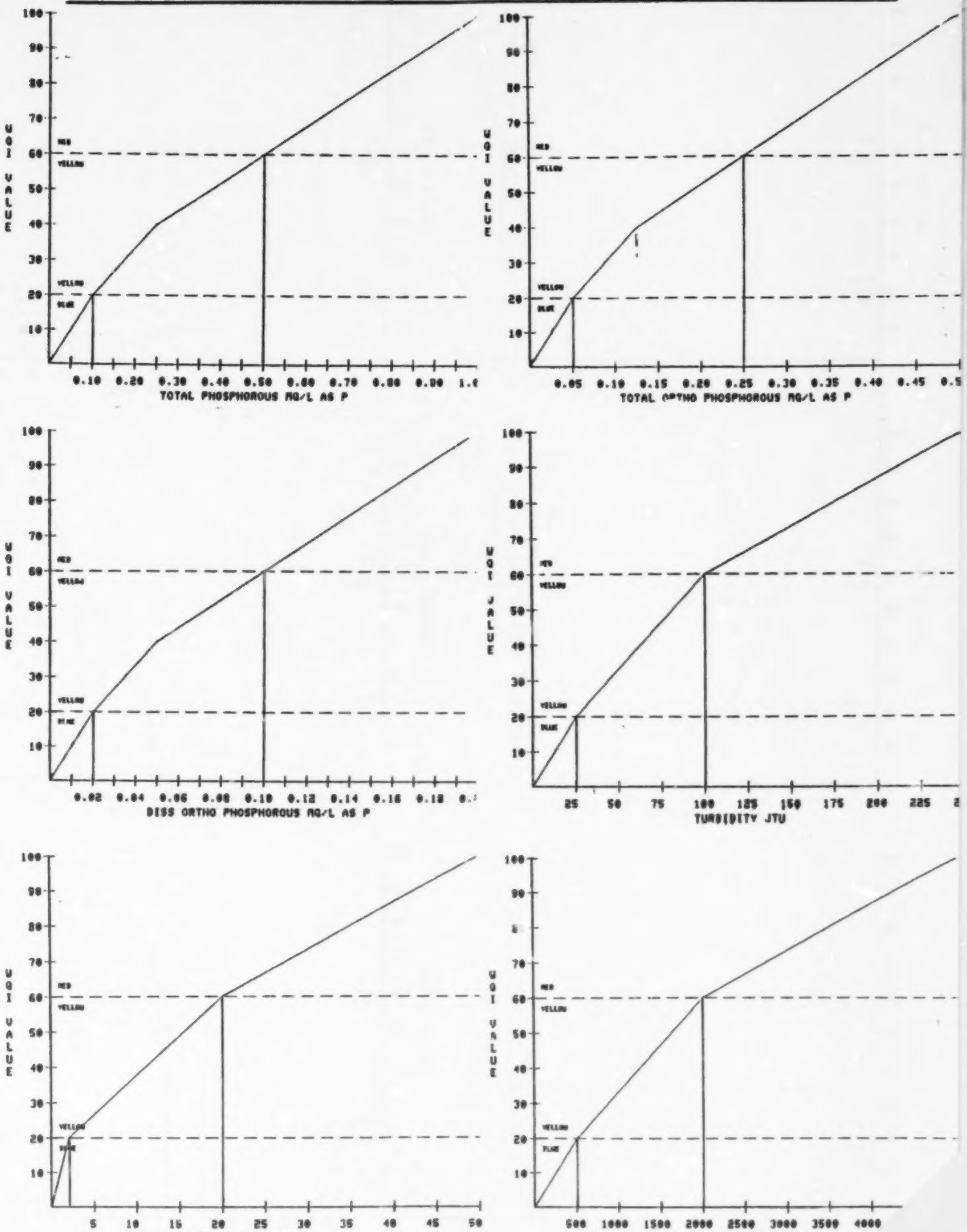


Figure A-1 (Continued). Severity Curves for Water Quality Parameters.

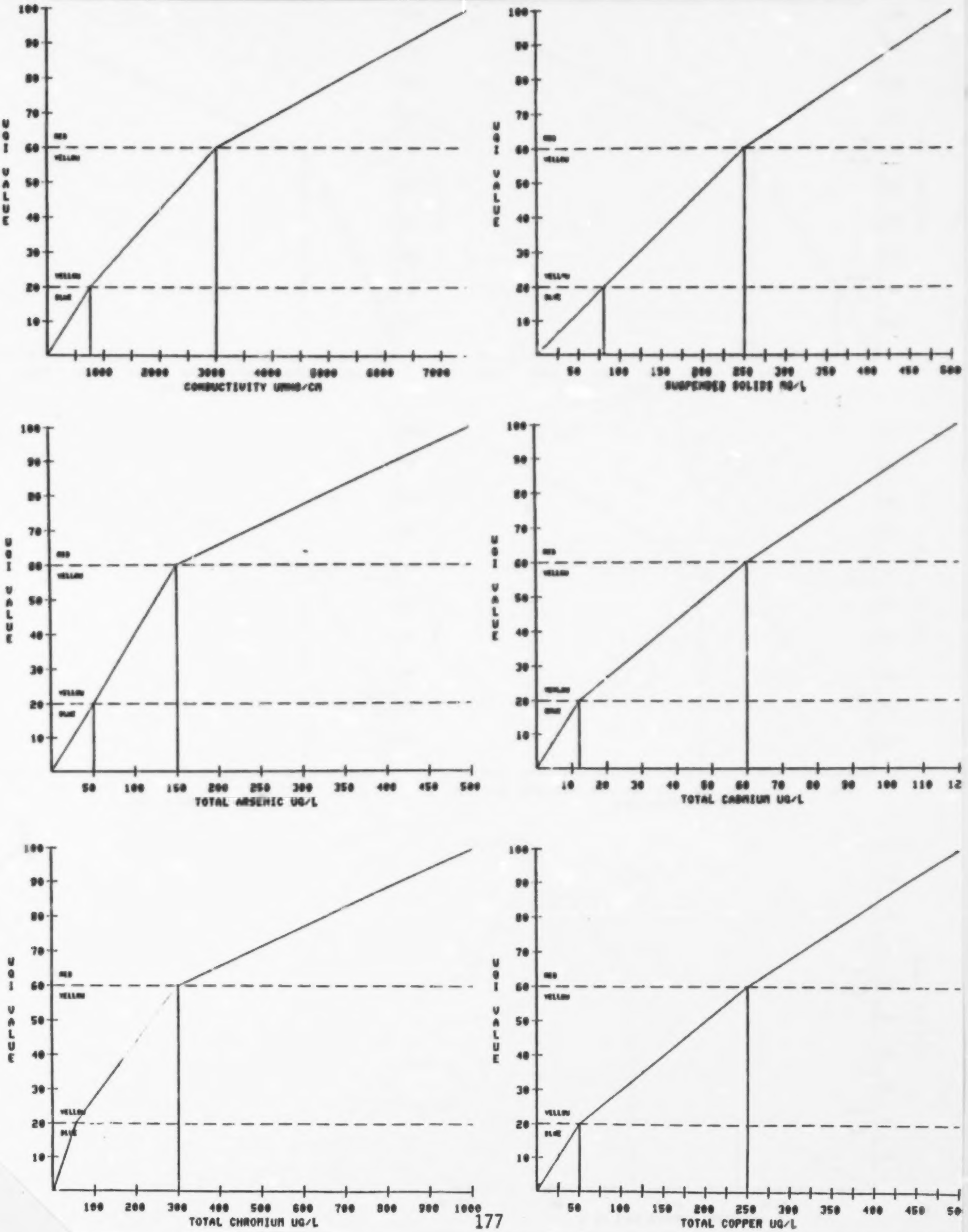
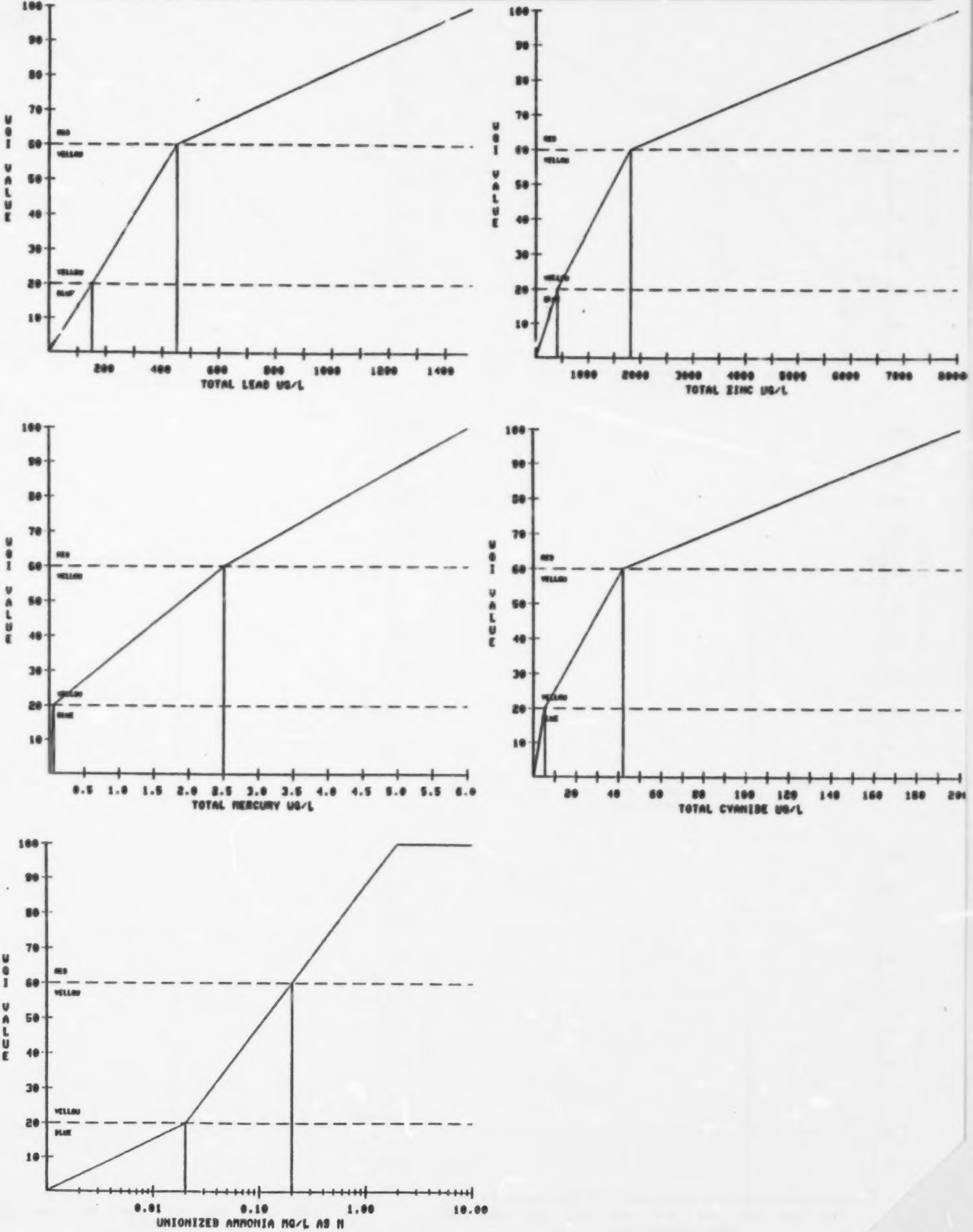


Figure A-1 (Continued). Severity Curves for Water Quality Parameters.



APPENDIX B

National Ambient Air Quality Standards

NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Time period/standard	Maximum permissible concentration
Suspended particulate matter	Annual, secondary	60 $\mu g/m^3$
(Total suspended particulates)	Annual, primary[a]	75 $\mu g/m^3$
(TSP)	24-hr, secondary[b]	150 $\mu g/m^3$[c]
	24-hr, primary	260 $\mu g/m^3$[c]
Sulfur dioxide	Annual, primary	80 $\mu g/m^3$
(SO_2)	24-hr, primary	365 $\mu g/m^3$[c]
	3-hr, secondary	1300 $\mu g/m^3$[c]
Carbon monoxide	1-hr, primary	40 mg/m^3
(CO)	8-hr, primary	10 mg/m^3
Oxidants/ozone (O_x + Oz or O_3)	1-hr, primary	235 $\mu g/m^3$[c]
Nitrogen dioxide (NO_2)	Annual, primary	100 $\mu g/m^3$[c]

[a] Primary: to protect public health.

[b] Secondary: to protect public welfare.

[c] These values are not to be exceeded more than once per year.

APPENDIX C

Breakpoints For Pollutant Standards Index

(Includes Alert Level For Each Pollutant)

Breakpoints for PSI (ψ) in Metric Units

Breakpoints	PSI Value (ψ)	TSP $\mu g/m^3$ 24-hr.	SO_2 $\mu g/m^3$ 24-hr.	$TSP \times SO_2$ $(\mu g/m^3)^2$	CO mg/m^3 8 hours	O_3 $\mu g/m^3$ 1-hr.	NO_2 $\mu g/m^3$ 1-hr.
50% of primary short-term NAAQS	50	75[a]	80[a]	b	5.0	118	b
Primary short-term NAAQS	100	260	365	b	10.0	235	b
Alert Level	200	375	800	65×10^3	17.0	400	1130
Warning Level	300	625	1600	261×10^3	34.0	800	2260
Emergency Level	400	875	2100	393×10^3	46.0	1000	3000
Significant Harm Level	500	1000	2620	490×10^3	57.5	1200	3750

[a] Annual primary NAAQS.

[b] No index value reported at concentration levels below those specified by the Alert level criteria.

APPENDIX D

Procedures Used To Determine Status

PROCEDURES USED TO DETERMINE STATUS
TOTAL SUSPENDED PARTICULATES

1. Select worst site in each county based on
    - Number of days per year greater than 260 $\mu g/m^3$,
    - Data available in 1978
    - Population exposure of site. Should be representative of populated area of county
2. For the selected site, the actual number of days greater than 260 $\mu g/m^3$ for each year (1976-1978)
3. For same site, number of days with at least one value greater than 375 $\mu g/m^3$.

SULFUR DIOXIDE

1. Select worst site in each county based on
    - o Population exposure. Must be in area where people are present
    - o Representativeness within county
    - o Number of days per year greater than 24-hour average of 365 $\mu g/m^3$
    - o Data available in 1978

2. For the selected site, number of days per year greater than primary 24-hour standard for three year period (1976-1978)
    - o Actual data used
    - o Continuous data preferred over noncontinuous

3. For same site count number of days with at least one value greater than 800 $\mu g/m^3$
    - o Actual data used

Trends

1. Analysis done only for counties with 3 or more years of data
2. Judgements based on
    - o Number of days per year over standard
    - o Annual average

NITROGEN DIOXIDE

1. Select worst site in each county based on
    - Highest annual average
    - Data available in 1978
2. Determine whether annual average is greater than 100 $\mu g/m^3$, average 1976-1978
    - Actual data are used
    - Years without valid annual average are disregarded

CARBON MONOXIDE

1. Select worst site in each county based on
   - o Number of days greater than 10 mg/m^3 8-hour average
   - o Data available for 1978
2. For selected site, count the number of days per year (1976-1978), with at least one 8-hour average greater than 10 mg/m^3. Average these yearly values.
   - o For periods with no data, estimate by examining data for same site for same period of other years and by looking at data for other nearby sites.
3. For same site count number of days with at least one value greater than 17 mg/m^3.
   - o Actual number always used

OZONE

1. Select worst site in county based on
    - Number of days greater than 235 μg/m^3
    - Data available for at least one year (1976-1978), during the months April through September.

2. For selected site, count the number of days per year (1976-1978), with at least one hourly value greater than 235 μg/m^3.
    - For periods with no data, estimate by examining data from nearby sites and for the same site during same period of other years.
    - Data are insufficient if unavailable during the peak ozone season (April-September).

3. For same site, count number of days with at least one value greater than 400 μg/m^3.
    - Actual number is always used

APPENDIX E

National Aerometric Data Bank - State Inventory by Pollutant

NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
COLORADO

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	060020001	F01	ADAMS CO	7	01	1977	71	421.	97.	
					7	01	1978	87	255.	107.	
		060040001	F01	ALAMOSA	7	01	1977	87	433.	77.	
					7	01	1978	73	202.	60.	
		060060001	F03	ALAMOSA CO	7	01	1977	69	75.	17.	*
					7	01	1978	26	73.	13.	*
		060080001	F01	ARAPAHOE CO	7	01	1977	80	166.	60.	
					7	01	1978	83	161.	68.	
		060080002	F01	ARAPAHOE CO	7	01	1978	14	90.	50.	*
		060100001	F01	ARCHULETA CO	7	01	1977	82	403.	118.	
					7	01	1978	80	354.	123.	
		060120003	F01	ARVADA	7	01	1977	77	180.	81.	
					7	01	1978	80	228.	98.	
		060140001	F01	AURORA	7	01	1977	77	157.	76.	
					7	01	1978	85	187.	76.	
		060200001	F01	BOULDER	7	01	1977	81	144.	69.	
					7	01	1978	59	197.	81.	
		060240001	F01	BRIGHTON	7	01	1977	75	176.	83.	
					7	01	1978	84	355.	98.	
		060260001	F01	BROOMFIELD	7	01	1977	75	148.	66.	
					7	01	1978	68	200.	76.	
		060280001	F01	BRUSH	7	01	1977	70	233.	.6.	
					7	01	1978	50	155.	74.	
		060300001	F01	CANON CITY	7	01	1977	92	227.	63.	
					7	01	1978	89	313.	85.	
		060360001	F01	CLEAR CREEK CO	7	01	1977	85	168.	80.	
					7	01	1976	84	175.	79.	
		060380004	F01	COLORADO SPRINGS	7	01	1977	80	255.	85.	
					7	01	1978	77	255.	96.	
		060440002	F01	CORTEZ	7	01	1977	16	79.	49.	*
					7	01	1978	41	79.	41.	*
		060480001	F01	CRAIG	7	01	1977	78	146.	117.	
					7	01	1978	70	322.	115.	
		060540001	F01	DELTA	7	01	1977	90	233.	91.	
					7	01	1978	89	281.	106.	
		060580001	F01	DENVER	7	01	1977	76	270.	105.	
					7	01	1978	83	492.	132.	
		060580001	P01	DENVER	7	01	1977	32	297.	106.	
		060580002	F01	DENVER	7	01	1978	154	629.	187.	
		060580002	P01	DENVER	7	01	1977	56	669.	142.	
		060580003	F01	DENVER	7	01	1977	7	187.	112.	*
		060580003	F02	DENVER	7	01	1977	74	211.	94.	
					7	01	1978	80	309.	110.	
		060580007	F01	DENVER	7	01	1977	92	206.	73.	
					7	01	1978	85	170.	81.	
		060580009	F01	DENVER	7	01	1977	84	211.	79.	
					7	01	1978	85	251.	99.	
		060580012	F01	DENVER	7	01	1977	74	499.	167.	

DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0

NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
COLORADO

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	060580012	F01	DENVER	7	01	1978	61	378.	142.	*
		060660001	F01	DOUGLAS CO	7	01	1978	74	269.	111.	
		060680003	F01	DURANGO	7	01	1977	89	218.	76.	
					7	01	1978	88	340.	79.	
		060700001	F01	EAGLE CO	7	01	1977	53	350.	67.	
					7	01	1978	43	468.	107.	
		060700003	F01	EAGLE CO	7	01	1977	13	260.	114.	*
		060700004	F01	EAGLE CO	7	01	1977	55	218.	91.	
					7	01	1978	49	417.	115.	*
		060720001	F01	EDGEWATER	7	01	1977	82	198.	83.	
					7	01	1978	81	273.	103.	
		060780001	F01	ENGLEWOOD	7	01	1977	82	249.	88.	
					7	01	1978	84	285.	108.	
		060800001	F01	FLORENCE	7	01	1977	83	202.	83.	
					7	01	1978	84	225.	87.	
		060820001	F01	FORT COLLINS	7	01	1977	71	172.	67.	
					7	01	1978	75	224.	83.	
		060880001	F01	GARFIELD CO	7	01	1977	91	377.	121.	
					7	01	1978	82	494.	144.	
		060880003	F01	GARFIELD CO	7	01	1977	35	334.	76.	*
					7	01	1978	51	213.	78.	*
		060920001	F01	GLENWOOD SPRINGS	7	01	1977	74	194.	73.	
					7	01	1978	68	165.	62.	
		060940001	F01	GOLDEN	7	01	1977	87	225.	70.	
					7	01	1978	80	203.	84.	
		060980010	F01	GRAND JUNCTION	7	01	1977	91	176.	84.	
					7	01	1978	85	148.	80.	
		060980011	F01	GRAND JUNCTION	7	01	1978	11	163.	70.	*
		061000003	F01	GREELEY	7	01	1977	76	224.	72.	
					7	01	1978	70	296.	83.	
		061000004	F01	GREELEY	7	01	1977	17	280.	131.	*
		061000006	F01	GREELEY	7	01	1977	67	148.	63.	*
					7	01	1978	87	291.	77.	
		061020001	F01	GUNNISON	7	01	1977	49	131.	49.	*
					7	01	1978	69	193.	69.	
		061040002	F01	GUNNISON CO	7	01	1977	75	173.	81.	
					7	01	1978	81	244.	104.	
		061120001	F01	JACKSON CO	7	01	1977	8	45.	23.	*
		061120002	F01	JACKSON CO	7	01	1977	16	135.	37.	*
					7	01	1978	64	126.	46.	
		061140001	F02	JEFFERSON CO	7	01	1977	83	149.	43.	
					7	01	1978	59	151.	60.	
		061220001	F01	LA JUNTA	7	01	1977	91	920.	97.	
					7	01	1978	84	265.	78.	
		061260001	F01	LAKEWOOD	7	01	1977	81	273.	72.	
					7	01	1978	80	217.	96.	
		061280001	F01	LAMAR	7	01	1977	80	881.	123.	
					7	01	1978	88	497.	97.	

"*" DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL. 3, SEC 2.3.0

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10-11-79                               NATIONAL AEROMETRIC DATA BANK                                  PAGE 06-0003
                                      STATE INVENTORY BY POLLUTANT
                                                COLORADO

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POL-MTH           POLLUTANT               SITE     AG/        LOCATION         INT  UNIT YEAR  NUM    MAX      ARITH
 CODE               NAME                  CODE     PRJ          NAME           CODE CODE       OBS    OBS      MEAN
----------------------------------------------------------------------------------------------------------------
110191 PARTICULATE                     061300001 F03 LA PLATA CO                7    01  1977   53   280.       50.   *
                                       061300002 K03 LA PLATA CO                7    01  1977  121   272.       43.
                                                                                7    01  1978   25    45.       12.   *
                                       061300003 K03 LA PLATA CO                7    01  1977  121   175.       31.
                                                                                7    01  1978   12    24.       13.   *
                                       061320003 F01 LARIMER CO                 7    01  1977   14    73.       42.   *
                                       061420002 F01 LITTLETON                  7    01  1977   78   174.       70.
                                                                                7    01  1978   62   244.       96.   *
                                       061460001 F01 LONGMONT                   7    01  1977   79   185.       82.
                                                                                7    01  1978   82   563.      101.
                                       061480002 F01 LOVELAND                   7    01  1977   67   164.       80.
                                                                                7    01  1978   70   299.       93.
                                       061500001 F01 MANITOU SPRINGS            7    01  1977   76   358.       92.
                                                                                7    01  1978   71   186.       79.
                                       061520001 F01 MESA CO                    7    01  1977   90   188.       73.
                                                                                7    01  1978   88   171.       80.
                                       061520002 F01 MESA CO                    7    01  1977   87   158.       50.
                                                                                7    01  1978   81   224.       49.
                                       061530002 P03 MESA VERDE NAT PARK        7    01  1977   21    99.       20.   *
                                       061530003 F03 MESA VERDE NAT PARK        7    01  1977   57   125.       23.
                                                                                7    01  1978   77    38.       16.
                                       061600004 K03 MONTEZUMA CO               7    01  1977  112   280.       33.
                                                                                7    01  1978   16    42.       13.   *
                                       061620001 F01 MONTROSE                   7    01  1977   71   165.       74.
                                                                                7    01  1978   77   147.       64.
                                       061780001 F01 PITKIN CO                  7    01  1977   82   307.       88.
                                                                                7    01  1978   57   455.      106.
                                       061820001 F01 PUEBLO                     7    01  1977   88   383.      116.
                                                                                7    01  1978   87   299.      108.
                                       061820003 F01 PUEBLO                     7    01  1977   87   358.      109.
                                                                                7    01  1978   72   301.      106.
                                       061860001 F01 RIO BLANCO CO              7    01  1977   78   159.       40.
                                                                                7    01  1978   42   138.       62.   *
                                       061860001 J03 RIO BLANCO CO              7    01  1977    6     6.        4.   *
                                       061860002 F01 RIO BLANCO CO              7    01  1977   88   161.       62.
                                                                                7    01  1978   60   285.       69.
                                       061860002 J03 RIO BLANCO CO              7    01  1977   10    10.        4.   *
                                       061860003 F03 RIO BLANCO CO              7    01  1977   24    57.       15.   *
                                       061860003 J03 RIO BLANCO CO              7    01  1977   10    14.        4.   *
                                       061860004 J03 RIO BLANCO CO              7    01  1977   10    39.        8.   *
                                       061900001 F01 ROCKY FORD                 7    01  1977   88   478.      100.
                                                                                7    01  1978   82   251.       96.
                                       061920003 F01 ROUTT CO                   7    01  1977   68   353.      137.
                                                                                7    01  1978   77   983.      188.
                                       061920004 F01 ROUTT CO                   7    01  1977    2   122.      119.   *
                                                                                7    01  1978    5    41.       29.   *
                                       062000001 F01 SAN MIGUEL CO              7    01  1977   76   289.      100.
                                                                                7    01  1978   19   223.      122.   *
* DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL. 1, SEC 2.3.0
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NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
COLORADO

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	062080001	F01	STERLING	7	01	1977	79	647.	98.	
					7	01	1978	72	217.	82.	
		062160002	F01	TRINIDAD	7	01	1977	69	272.	72.	
					7	01	1978	79	109.	51.	
		062180001	F01	WALSENBURG	7	01	1977	78	324.	76.	
					7	01	1978	87	135.	56.	
		062220003	F01	WELD CO	7	01	1977	85	264.	114.	
					7	01	1978	87	417.	105.	
		062220004	F01	WELD CO	7	01	1977	91	485.	101.	
					7	01	1978	85	500.	113.	
		062220005	F01	WELD CO	7	01	1977	88	232.	77.	
					7	01	1978	86	770.	85.	
		062220006	F01	WELD CO	7	01	1977	20	866.	216.	*
					7	01	1978	37	326.	140.	*
		062240002	F01	WESTMINSTER	7	01	1977	81	191.	76.	
					7	01	1978	83	198.	84.	
4210111	CARBON MONOXIDE	060080002	F01	ARAPAHOE CO	1	07	1978	3669	13.0	1.9	*
		060120002	F01	ARVADA	1	07	1977	8036	25.9	1.9	
					1	07	1978	7953	27.9	2.3	
		060200006	P05	BOULDER	1	07	1977	1369	20.0	1.5	*
					1	07	1978	2691	15.0	.9	*
		060200008	G05	BOULDER	1	07	1978	695	11.3	1.7	*
		060380004	F01	COLORADO SPRINGS	1	07	1977	7724	16.0	1.8	
					1	07	1978	8016	24.0	1.8	
		060380005	F01	COLORADO SPRINGS	1	07	1978	4432	21.5	2.1	*
		060580002	F01	DENVER	1	07	1977	7879	35.2	3.1	
					1	07	1978	8045	42.8	4.1	
		060580009	F01	DENVER	1	07	1977	8021	20.7	2.7	
					1	07	1978	7840	24.2	2.2	
		060580010	F01	DENVER	1	07	1977	7921	40.6	5.3	
					1	07	1978	8062	45.5	5.7	
		060580011	F01	DENVER	1	07	1977	8091	25.6	1.6	
					1	07	1978	3133	21.0	1.9	*
		060700006	P05	EAGLE CO	1	07	1978	466	28.9	4.0	*
		060980010	F01	GRAND JUNCTION	1	07	1977	2374	18.5	1.7	*
					1	07	1978	7726	16.0	1.5	
		061000005	F01	GREELEY	1	07	1977	8076	25.5	1.2	
					1	07	1978	8001	17.5	1.3	
		062210001	F01	WELBY	1	07	1977	7450	24.1	1.6	
					1	07	1978	7752	20.3	1.5	
4240114	SULFUR DIOXIDE	060080002	F01	ARAPAHOE CO	1	07	1978	4089	.037	.003	*
		060120002	F01	ARVADA	1	07	1977	8003	.108	.003	
					1	07	1978	7832	.077	.003	
		060580002	F01	DENVER	1	07	1977	7977	.206	.011	
					1	07	1978	7960	.318	.011	
		060580009	F01	DENVER	1	07	1977	8047	.132	.004	
					1	07	1978	7888	.148	.005	
		060580010	F01	DENVER	1	07	1977	7978	.110	.006	

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                                    NATIONAL AEROMETRIC DATA BANK                                    PAGE 06-0005
                                    STATE INVENTORY BY POLLUTANT
                                              COLORADO
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POL-MTP         POLLUTANT              SITE       AG/      LOCATION       INT  UNIT YEAR  NUM     MAX        ARITH
 CODE             NAME                 CODE       PRJ        NAME         CODE CODE       OBS     OBS        MEAN
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4240114 SULFUR DIOXIDE
                                    060580010 F01 DENVER
                                                                           1    07  1978 8059    .186       .006
                                    060580011 F01 DENVER
                                                                           1    07  1977 7664    .129       .006
                                                                           1    07  1978 3183    .177       .008  *
                                    061820007 F01 PUEBLO
                                                                           1    07  1977  159    .045       .002  *
                                                                           1    07  1978 5542    .055       .004  *
                                    062210001 F01 WELBY
                                                                           1    07  1977 7789    .159       .005
4240191 SULFUR DIOXIDE
                                                                           1    07  1978 7931    .211       .006
                                    060580001 P01 DENVER
                                                                           7    01  1977   51   48.        14.
                                    060580002 P01 DENVER
4260211 NITROGEN DIOXIDE
                                                                           7    01  1977   51   52.        16.
                                    060580002 F01 DENVER
                                                                           1    07  1977 5214    .36        .06   *
4260214 NITROGEN DIOXIDE
                                                                           1    07  1978  227    .24        .05   *
                                    060380004 F01 COLORADO SPRINGS
                                                                           1    07  1977 5017    .160       .017  *
                                                                           1    07  1978 6978    .190       .024
                                    060580002 A05 DENVER
                                                                           1    07  1977 7936    .330       .054
                                                                           1    07  1978 2769    .200       .047  *
                                    060580002 F01 DENVER
                                                                           1    07  1977 2380    .146       .051  *
                                                                           1    07  1978 7822    .290       .049
                                    062210001 F01 WELBY
                                                                           1    07  1977 7679    .170       .021
4260284 NITROGEN DIOXIDE
                                                                           1    07  1978 8034    .210       .023
                                    060580001 P01 DENVER
                                                                           7    01  1977   49   77.        38.
                                    060580002 P01 DENVER
4310111 TOTAL HYDROCARBON
                                                                           7    01  1977   50   72.        48.
                                    060080007 F01 ARAPAHOE CO
                                                                           1    07  1978 4087    4.6        1.7   *
                                    060120002 F01 ARVADA
                                                                           1    07  1977 8063    8.7        2.5
                                                                           1    07  1978 7978    8.3        2.3
                                    060580002 F01 DENVER
                                                                           1    07  1977 7575   15.8        2.7
                                                                           1    07  1978 8053   12.9        2.6
                                    060580009 F01 DENVER
                                                                           1    07  1977 7962   10.8        2.3
                                                                           1    07  1978 7892   10.4        2.5
                                    060580010 F01 DENVER
                                                                           1    07  1977 8032   11.0        2.9
                                                                           1    07  1978 8095   12.7        2.9
                                    060580011 F01 DENVER
                                                                           1    07  1977 6508   15.4        2.7   *
                                                                           1    07  1978 2675   11.7        2.8   *
                                    062210001 F01 WELBY
                                                                           1    07  1977 7953   15.4        2.5
4420111 OZONE
                                                                           1    07  1978 7811   15.4        2.9
                                    060080002 F01 ARAPAHOE CO
                                                                           1    07  1978 4083    .110       .033  *
                                    060120002 F01 ARVADA
                                                                           1    07  1977 7950    .129       .027
                                                                           1    07  1978 7766    .130       .022
                                    060200006 G05 BOULDER
                                                                           1    07  1977 1068    .052       .011  *
                                                                           1    07  1978  701    .090       .029  *
                                    060380004 F01 COLORADO SPRINGS
                                                                           1    07  1977 7850    .085       .023
                                                                           1    07  1978 8227    .100       .022
                                    060580002 F01 DENVER
                                                                           1    07  1977 7890    .146       .021
                                                                           1    07  1978 7973    .120       .018
                                    060580009 F01 DENVER
                                                                           1    07  1977 7753    .166       .024
                                                                           1    07  1978 7812    .140       .022
                                    060580010 F01 DENVER
                                                                           1    07  1977 7920    .090       .015
                                                                           1    07  1978 8080    .070       .013
                                                                           1    07  1977 8001    .155       .022
                                    060580011 F01 DENVER
* DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
COLORADO

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
4420111	OZONE	060580011	F01	DENVER	1	07	1978	3210	.108	.019	*
		060820004	F01	FORT COLLINS	1	07	1978	4090	.150	.038	*
		061000005	F01	GREELEY	1	07	1977	413	.030	.011	*
					1	07	1978	8051	.125	.023	
		062210001	F01	WELBY	1	07	1977	7850	.153	.028	
					1	07	1978	7627	.223	.025	

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NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
MONTANA

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	270020007	F01	ANACONDA	7	01	1978	94	101.	41.	*
		270020008	F01	ANACONDA	7	01	1978	21	77.	39.	*
		270060009	F03	BIG HORN CO	7	01	1977	55	159.	49.	
					7	01	1978	15	209.	67.	*
		270060010	F03	BIG HORN CO	7	01	1977	50	108.	25.	
					7	01	1978	39	72.	22.	
		270080006	G02	BILLINGS	7	01	1977	59	166.	55.	
					7	01	1978	35	135.	54.	*
		270080007	G01	BILLINGS	7	01	1977	60	163.	38.	
					7	01	1978	49	155.	43.	*
		270080008	G01	BILLINGS	7	01	1977	57	165.	63.	
					7	01	1978	53	175.	74.	
		270080009	G01	BILLINGS	7	01	1977	55	155.	53.	
					7	01	1978	40	171.	55.	*
		270080059	F01	BILLINGS	7	01	1978	88	183.	72.	*
		270080059	F07	BILLINGS	7	01	1978	2	44.	32.	*
		270080060	F01	BILLINGS	7	01	1978	17	145.	71.	*
		270170001	F01	BOZEMAN	7	01	1978	48	60.	32.	
		270160003	F01	BUTTE	7	01	1977	16	210.	74.	*
		270160005	F01	BUTTE	7	01	1977	41	233.	93.	*
					7	01	1978	52	195.	80.	
		270160011	F02	BUTTE	7	01	1977	38	130.	42.	*
					7	01	1978	14	60.	28.	*
		270160014	F01	BUTTE	7	01	1977	42	49.	22.	*
					7	01	1978	45	53.	21.	
		270160016	F02	BUTTE	7	01	1977	34	297.	99.	*
					7	01	1978	24	191.	66.	*
		270160017	F01	BUTTE	7	01	1978	102	158.	71.	*
		270160018	F01	BUTTE	7	01	1978	26	106.	54.	*
		270160019	F01	BUTTE	7	01	1978	32	169.	63.	*
		270160020	F01	BUTTE	7	01	1978	13	111.	53.	*
		270200002	F03	CARTER CO	7	01	1977	21	535.	77.	*
		270270002	F01	COLUMBIA FALLS	7	01	1977	27	223.	92.	*
		270270005	F01	COLUMBIA FALLS	7	01	1977	35	467.	126.	*
					7	01	1978	55	426.	130.	
		270300004	F03	CUSTER CO	7	01	1977	38	45.	20.	
					7	01	1978	5	16.	11.	*
		270340001	F03	DANIELS CO	7	01	1977	37	107.	33.	*
					7	01	1978	52	80.	15.	
		270340002	F03	DANIELS CO	7	01	1977	34	100.	29.	*
					7	01	1978	47	129.	20.	
		270340003	F03	DANIELS CO	7	01	1977	36	109.	37.	*
					7	01	1978	52	100.	20.	
		270360001	F03	DAWSON CO	7	01	1977	21	51.	23.	*
					7	01	1978	9	46.	21.	*
		270360002	F03	DAWSON CO	7	01	1977	13	156.	38.	*
		270360003	F03	DAWSON CO	7	01	1977	9	109.	37.	*
					7	01	1978	6	40.	22.	*

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                                        NATIONAL AEROMETRIC DATA BANK
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                                                   MONTANA
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POL-MTH       POLLUTANT
CODE            NAME                   SITE      AG/        LOCATION
                                       CODE      PRJ          NAME          INT  UNIT YEAR  NUM     MAX          ARITH
------------------------------------------------------------------------  CODE  CODE        OBS     OBS          MEAN
1110191 PARTICULATE                                                  --------------------------------------------------------------
                                    270360004 F03 DAWSON CO                                                      
                                    270400004 F02 DEER LODGE CO          7    01  1978     8     20.            8.
                                                                         7    01  1977    59    161.           50.    *
                                    270480029 F02 FLAT HEAD CO           7    01  1978    54    155.           33.
                                                                         7    01  1977    45    126.           28.
                                    270480034 F05 FLAT HEAD CO           7    01  1978    55     59.           24.    *
                                    270520003 F07 GALLATIN CO            7    01  1978     9     40.           14.
                                                                         7    01  1977    23    309.          110.    *
                                    270570001 P03 GLACIER NAT PARK       7    01  1978    32    255.           79.    *
                                                                         7    01  1977    37     29.            8.    *
                                    270640005 F02 GRANITE CO             7    01  1978    22     30.            9.    *
                                                                         7    01  1977    51    217.           64.
                                    270660007 G02 GREAT FALLS            7    01  1978    54    267.           55.
                                                                         7    01  1977    93    225.           44.
                                    270660009 G01 GREAT FALLS            7    01  1978    25    136.           46.    *
                                                                         7    01  1977    93    869.           69.
                                    270660015 F01 GREAT FALLS            7    01  1978    44    125.           61.
                                                                         7    01  1977    34    411.          118.    *
                                    270660016 F01 GREAT FALLS            7    01  1978     8    148.           58.    *
                                    270720001 F01 HELENA                 7    01  1978    19     62.           26.    *
                                    270720001 P01 HELENA                 7    01  1978    56    234.           55.
                                    270720002 F01 HELENA                 7    01  1977    41    208.           52.
                                    270760903 F02 JEFFERSON CO           7    01  1978    25     98.           49.    *
                                                                         7    01  1977    58    103.           27.
                                    270800013 F01 KALISPELL              7    01  1978    50    101.           28.
                                                                         7    01  1977    53    226.           75.
                                    270800014 F01 KALISPELL              7    01  1978    37    411.          109.    *
                                    270820011 F05 LAKE CO                7    01  1978    11    110.           65.    *
                                    270840001 G02 LAUREL                 7    01  1978     9    170.           40.    *
                                                                         7    01  1977    54    150.           41.
                                    270860002 F02 LEWIS AND CLARK CO     7    01  1978    49    111.           44.    *
                                                                         7    01  1977    49    192.           76.
                                    270900009 F01 LIBBY                  7    01  1978    44    201.           87.    *
                                    270900010 F01 LIBBY                  7    01  1977    12    119.           59.    *
                                                                         7    01  1977    20    196.          113.    *
                                    270940001 F03 LINCOLN CO             7    01  1978    52   1384.          196.
                                                                         7    01  1977    37    171.           58.    *
                                    270940002 F03 LINCOLN CO             7    01  1978    34    247.           74.    *
                                                                         7    01  1977    20     33.           14.    *
                                    270980001 F03 MC CONE CO             7    01  1978    27     45.           17.    *
                                                                         7    01  1977    26     88.           28.    *
                                    271100001 G01 MISSOULA CO            7    01  1978    46     58.           15.
                                                                         7    01  1977   347    295.           95.
                                    271100009 G01 MISSOULA CO            7    01  1978   294    390.           97.    *
                                                                         7    01  1977   347    180.           53.
                                    271100010 G01 MISSOULA CO            7    01  1978   320    320.           79.
                                                                         7    01  1977    17    190.           90.    *
                                    271100014 G02 MISSOULA CO            7    01  1978    55    166.           71.
                                                                         7    01  1977   275    255.           47.    *
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POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	271100015	G02	MISSOULA CO	7	01	1977	223	79.	30.	*
					7	01	1978	295	144.	35.	*
		271100016	G02	MISSOULA CO	7	01	1977	232	113.	32.	*
					7	01	1978	299	201.	40.	*
		271100017	G02	MISSOULA CO	7	01	1977	131	84.	22.	*
					7	01	1978	295	125.	29.	*
		271100018	G01	MISSOULA CO	7	01	1977	100	279.	87.	*
					7	01	1978	86	457.	145.	*
		271100018	G02	MISSOULA CO	7	01	1977	17	132.	62.	*
		271100019	F01	MISSOULA CO	7	01	1977	29	335.	104.	*
					7	01	1978	288	676.	106.	*
		271100020	G01	MISSOULA CO	7	01	1978	90	244.	104.	*
		271240008	P03	POWDER RIVER CO	7	01	1977	24	72.	19.	*
					7	01	1978	6	37.	16.	*
		271240009	F03	POWDER RIVER CO	7	01	1977	57	275.	23.	
					7	01	1978	26	56.	21.	*
		271360003	F03	ROSEBUD CO	7	01	1977	19	243.	26.	*
					7	01	1978	17	34.	12.	*
		271360026	P03	ROSEBUD CO	7	01	1977	50	280.	32.	
					7	01	1978	46	84.	26.	
		271360027	F02	ROSEBUD CO	7	01	1977	27	95.	32.	*
					7	01	1978	13	138.	34.	*
		271360028	F02	ROSEBUD CO	7	01	1977	12	102.	24.	*
		271360028	F03	ROSEBUD CO	7	01	1978	1	8.	8.	*
		271400002	F01	SANDERS CO	7	01	1978	23	367.	73.	*
		271480015	F02	SILVER BOW CO	7	01	1977	42	89.	36.	*
					7	01	1978	50	81.	29.	
4210111	CARBON MONOXIDE	270080053	F01	BILLINGS	1	07	1977	4620	19.2	2.3	*
					1	07	1978	1563	15.9	1.7	*
		270160015	F01	BUTTE	1	07	1977	3772	14.0	.9	*
					1	07	1978	1971	12.5	1.3	*
		270160015	F02	BUTTE	1	07	1978	1279	14.9	1.6	*
		270660015	F01	GREAT FALLS	1	07	1977	3601	23.1	2.4	*
					1	07	1978	1309	24.5	3.1	*
		270660015	F02	GREAT FALLS	1	07	1978	1092	15.1	3.2	*
		271080003	F01	MISSOULA	1	07	1977	6788	31.6	5.1	
					1	07	1978	2436	28.0	6.9	*
		271100019	F01	MISSOULA CO	1	07	1978	1307	24.0	3.3	*
4210121	CARBON MONOXIDE	270160018	F01	BUTTE	1	07	1978	1516	15.5	1.2	*
4240114	SULFUR DIOXIDE	270020007	F01	ANACONDA	1	07	1978	2723	1.210	.017	*
		270020904	F02	ANACONDA	1	07	1977	6826	1.050	.012	
					1	07	1978	1946	.950	.019	*
		270080053	F01	BILLINGS	1	07	1977	5649	.200	.003	*
					1	07	1978	2171	.170	.063	*
		270160018	F01	BUTTE	1	07	1978	892	.090	.007	*
		270400004	F02	DEER LODGE CO	1	07	1977	7043	1.840	.036	
					1	07	1978	7591	2.750	.058	
		270400012	F02	DEER LODGE CO	1	07	1977	6623	1.680	.028	

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POL-MTH           POLLUTANT                  SITE      AG/        LOCATION         INT  UNIT YEAR  NUM      MAX        ARITH
 CODE               NAME                     CODE      PRJ          NAME          CODE  CODE       OBS      OBS        MEAN
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4240114 SULFUR DIOXIDE                     270400012 F02 DEER LODGE CO             1    07  1978 6741     1,600        .036
                                           270400801 J02 DEER LODGE CO             1    07  1977 8444      .960        .016
                                                                                   1    07  1978 5935     1,250        .020   *
                                           270400802 J02 DEER LODGE CO             1    07  1977 8421      .710        ,014
                                                                                   1    07  1978 6010      .710        ,017   *
                                           270400803 J02 DEER LODGE CO             1    07  1977 8346      .690        ,013
                                                                                   1    07  1978 5428     1.600        .016   *
                                           270400804 J02 DEER LODGE CO             1    07  1977 8461     1,270        .020
                                                                                   1    07  1978 5542     1,240        .024   *
                                           270400806 J02 DEER LODGE CO             1    07  1977 7771    16,100        .026
                                                                                   1    07  1978 5925     1,500        .033   *
                                           270400807 J02 DEER LODGE CO             1    07  1977 7701     1,030        .016
                                                                                   1    07  1978 5703     1,250        ,023   *
                                           270400906 F02 DEER LODGE CO             1    07  1977 7840     3,510        .023
                                                                                   1    07  1978 1961     2,430        .028   *
                                           270720001 F02 HELENA                    1    07  1977 3330      .400        .006   *
                                           270720011 F02 HELENA                    1    07  1977 6644      .660        .014
                                                                                   1    07  1978 4284      .480        .007   *
                                           270760902 F02 JEFFERSON CO              1    07  1977 3601      .780        .013   *
                                           270760903 F02 JEFFERSON CO              1    07  1977 8290     1.400        .012
                                                                                   1    07  1978 3794      .420        .008   *
                                           270760904 F02 JEFFERSON CO              1    07  1977  500      .880        .037   *
                                                                                   1    07  1978 5064      .800        ,009   *
                                           270840009 F01 LAUREL                    1    07  1978  373      .530        .046   *
                                           270840009 F05 LAUREL                    1    07  1977 4474      .630        ,050   *
                                           270840009 G02 LAUREL                    1    07  1977 1269      .620        ,056   *
                                                                                   1    07  1978 1214      .660        ,057   *
                                           271100019 F01 MISSOULA CO               1    07  1977 1005      .010        .001   *
                                                                                   1    07  1978 5104      .050        .002   *
                                           271360027 F02 ROSEBUD CO                1    07  1977 3351      .100        .003   *
4240120 SULFUR DIOXIDE                     270020007 F01 ANACONDA                  1    07  1978 2190     1.000        .078   *
                                           270080059 F01 BILLINGS                  1    07  1978 1827      .195        .012   *
4240191 SULFUR DIOXIDE                     270080006 F05 BILLINGS                  7    01  1977   38   354.         71.       *
                                           270340001 F03 DANIELS CO                7    07  1977   37      .001        .001   *
                                           270570001 P03 GLACIER NAT PARK          7    01  1977   45     6.           3.
                                           270840009 G02 LAUREL                    7    01  1977   18   391.        174.       *
                                           270980001 F03 MC CONE CO                7    07  1977   24      .001        .001   *
                                           271360003 F03 ROSEBUD CO                7    07  1977   15      .001        .001   *
                                           271360028 F02 ROSEBUD CO                7    07  1977    5      .001        .001   *
4240197 SULFUR DIOXIDE                     270340001 F03 DANIELS CO                7    07  1978    6      .001        .001   *
4260211 NITROGEN DIOXIDE                   270020007 F01 ANACONDA                  1    07  1978  128      .02         .01    *
                                           270080053 F01 BILLINGS                  1    07  1977 2352      .18         .03    *
                                                                                   1    07  1978  658      .18         .04    *
                                           270080059 F01 BILLINGS                  1    07  1978  425      .05         .01    *
                                           270160015 F01 BUTTE                     1    07  1977  682      .06         .01    *
                                           270160018 F01 BUTTE                     1    07  1978  372      .04         ,01    *
                                           271100019 F01 MISSOULA CO               1    07  1977  685      .10         .03    *
                                                                                   1    07  1978 3028      .10         .02    *
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POL-UTN CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
4260211	NITROGEN DIOXIDE	271360027	F02	ROSEBUD CO	1	07	1977	1953	.13	.03	*
4260214	NITROGEN DIOXIDE	270020007	F01	ANACONDA	1	07	1978	2003	.280	.007	*
		270080059	F01	BILLINGS	1	07	1978	1469	.075	.011	*
		270160015	F01	BUTTE	1	07	1977	308	.078	.023	*
		270160018	F01	BUTTE	1	07	1978	1293	.155	.024	*
4260284	NITROGEN DIOXIDE	270340001	F03	DANIELS CO	7	07	1977	38	.005	.001	*
					7	07	1978	14	.001	.001	*
		270570001	P03	GLACIER NAT PARK	7	01	1977	46	42.	3.	
					7	01	1978	22	12.	3.	*
		270980001	F03	MC CONE CO	7	07	1977	27	.001	.001	*
					7	07	1978	17	.001	.001	*
		271360003	F03	ROSEBUD CO	7	07	1977	15	.001	.001	*
					7	07	1978	3	.001	.001	*
		271360028	F02	ROSEBUD CO	7	07	1977	5	.005	.003	*
4310111	TOTAL HYDROCARBON	270080053	F01	BILLINGS	1	07	1977	4747	26.4	3.1	*
					1	07	1978	1573	11.4	3.8	*
		270080059	F01	BILLINGS	1	07	1978	865	8.3	2.4	*
		270160018	F01	BUTTE	1	07	1978	2653	7.1	2.0	*
		271100019	F01	MISSOULA CO	1	07	1977	573	7.6	2.1	*
					1	07	1978	5367	5.3	2.1	*
		271360027	F02	ROSEBUD CO	1	07	1977	1122	2.7	.5	*
4420111	OZONE	270080053	F01	BILLINGS	1	07	1977	7428	.078	.018	
					1	07	1978	3419	.120	.020	*
		270080059	F01	BILLINGS	1	07	1978	1394	.095	.021	*
		270160015	F01	BUTTE	1	07	1977	2577	.155	.045	*
		270160018	F01	BUTTE	1	07	1978	3672	.077	.022	*
		270310101	A08	CUSTER NATIONAL FOREST	1	07	1977	7603	.080	.040	
					1	07	1978	7675	.075	.029	
		271100019	F01	MISSOULA CO	1	07	1977	37	.023	.011	*
					1	07	1978	3705	.063	.013	*
		271360027	F02	ROSEBUD CO	1	07	1977	2922	.140	.050	*
		271720003	F02	YELLOWSTONE CO	1	07	1978	729	.200	.013	*

DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0

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                                        NATIONAL AEROMETRIC DATA BANK
                                        STATE INVENTORY BY POLLUTANT
                                               NORTH DAKOTA
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POL-MTH        POLLUTANT             SITE      AG/        LOCATION     INT  UNIT YEAR  NUM    MAX        ARITH
CODE             NAME                CODE      PRJ          NAME       CODE CODE       OBS    OBS        MEAN
-----------------------------------------------------------------------------------------------------
1110191 PARTICULATE               350040002 F03 BARNES CO               7    01  1977   30    94.        37.
                                                                        7    01  1978   18   190.        42.    *
                                  350080001 F03 BILLINGS CO             7    01  1977   49   118.        73.
                                                                        7    01  1978   51    95.        18.
                                  350100001 F01 BISMARCK                7    01  1977   58   632.        86.
                                                                        7    01  1978   60   199.        58.
                                  350100002 F01 BISMARCK                7    01  1977   61   630.       140.
                                                                        7    01  1978   40   537.       134.    *
                                  350160001 F03 BOWMAN CO               7    01  1977   59   232.        31.
                                                                        7    01  1978   49   112.        24.
                                  350200001 F03 BURLEIGH CO             7    01  1977   46   493.        71.    *
                                                                        7    01  1978   59   180.        36.
                                  350220001 F01 CASS CO                 7    01  1977   52   101.        42.
                                                                        7    01  1978   49   231.        42.
                                  350260001 F01 DEVILS LAKE             7    01  1977   19   131.        56.    *
                                                                        7    01  1978   13   112.        62.    *
                                  350300001 F01 DICKINSON               7    01  1977   28   100.        48.
                                                                        7    01  1978   20    82.        41.
                                  350340001 F03 DUNN CO                 7    01  1977   44    78.        29.
                                                                        7    01  1978   54   108.        24.
                                  350340002 F03 DUNN CO                 7    01  1977   56   189.        28.
                                                                        7    01  1978   33    47.        16.    *
                                  350400001 F01 FARGO                   7    01  1977   58   145.        54.
                                                                        7    01  1978   53   181.        55.
                                  350400002 F01 FARGO                   7    01  1977   57   243.        73.
                                                                        7    01  1978   39   250.        75.    *
                                  350480001 F01 GRAND FORKS             7    01  1977   29   128.        60.
                                                                        7    01  1978   27    91.        41.
                                  350480002 F01 GRAND FORKS             7    01  1977   50   162.        56.
                                                                        7    01  1978   40   143.        41.    *
                                  350520001 F03 GRANT CO                7    01  1977   56   228.        26.
                                                                        7    01  1978   52   120.        22.
                                  350560001 F03 HETTINGER CO            7    01  1977   60   224.        41.
                                                                        7    01  1978   36   330.        44.    *
                                  350560002 F03 HETTINGER CO            7    01  1977   59   317.        26.
                                                                        7    01  1978   33    37.        15.    *
                                  350580001 F01 JAMESTOWN               7    01  1977   26   417.        92.
                                                                        7    01  1978   19   104.        45.    *
                                  350700001 F03 MC KENZIE CO            7    01  1977   52   126.        26.
                                                                        7    01  1978   34    81.        18.    *
                                  350700002 F03 MC KENZIE CO            7    01  1978    1     8.         8.    *
                                  350720001 F03 MC LEAN CO              7    01  1977   43   245.        39.    *
                                                                        7    01  1978   54    69.        20.
                                  350720002 F03 MC LEAN CO              7    01  1977   55   154.        33.
                                                                        7    01  1978   36   128.        34.    *
                                  350740001 F01 MANDAN                  7    01  1977   61   273.        53.
                                                                        7    01  1978   53   174.        50.
                                  350760001 F01 MERCER CO               7    01  1977   58   290.        55.
"*" DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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STATE INVENTORY BY POLLUTANT
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POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	350760001	F01	MERCER CO	7	01	1978	19	284.	68.	*
		350760002	F03	MERCER CO	7	01	1977	58	224.	31.	
					7	01	1978	52	288.	52.	
		350780001	F01	MINOT	7	01	1977	17	166.	75.	*
					7	01	1978	26	106.	48.	
		350800001	F03	MORTON CO	7	01	1977	59	209.	34.	
					7	01	1978	38	113.	29.	*
		350820001	F03	MOUNTRAIL CO	7	01	1977	53	109.	26.	
					7	01	1978	35	77.	24.	*
		350860001	F03	OLIVER CO	7	01	1977	60	237.	32.	
					7	01	1978	58	104.	24.	
		351060001	F03	SHERIDAN CO	7	01	1977	50	106.	33.	
					7	01	1978	37	84.	21.	*
		351060002	F03	SHERIDAN CO	7	01	1977	51	132.	32.	
					7	01	1978	33	72.	20.	*
		351140001	F03	STARK CO	7	01	1977	55	421.	41.	
					7	01	1978	54	162.	29.	
		351180001	F03	STUTSMAN CO	7	01	1977	25	76.	37.	
					7	01	1978	16	63.	28.	*
		351240001	F01	VALLEY CITY	7	01	1977	23	202.	61.	*
					7	01	1978	15	251.	68.	*
		351260001	F01	WAHPETON	7	01	1977	28	81.	37.	
					7	01	1978	30	121.	39.	
		351300001	F03	WARD CO	7	01	1977	44	133.	26.	
					7	01	1978	48	111.	23.	*
		351360001	F01	WILLISTON	7	01	1977	29	520.	56.	
					7	01	1978	29	81.	35.	
1110192	PARTICULATE	350200001	F03	BURLEIGH CO	7	01	1977	57	211.	37.	
					7	01	1978	39	79.	20.	*
		350720001	F03	MC LEAN CO	7	01	1977	58	124.	20.	
		350860001	F03	OLIVER CO	7	01	1978	13	26.	15.	*
4240114	SULFUR DIOXIDE	350200001	F03	BURLEIGH CO	1	07	1977	6394	.100	.002	*
					1	07	1978	1374	.080	.003	*
		350860001	F03	OLIVER CO	1	07	1977	5366	.050	.002	*
					1	07	1978	5542	.110	.001	*
4240191	SULFUR DIOXIDE	350100001	F01	BISMARCK	7	01	1977	61	11.	3.	
					7	01	1978	30	3.	3.	*
		350100002	F01	BISMARCK	7	01	1977	54	9.	3.	
					7	01	1978	30	16.	3.	*
		350200001	F03	BURLEIGH CO	7	01	1977	53	14.	3.	
					7	01	1978	25	14.	3.	*
		350340002	F03	DUNN CO	7	01	1977	58	9.	3.	
					7	01	1978	27	3.	3.	*
		350400001	F01	FARGO	7	01	1977	54	22.	3.	
					7	01	1978	30	21.	4.	*
		350520001	F03	GRANT CO	7	01	1977	57	9.	3.	
					7	01	1978	30	22.	3.	*
		350560001	F03	HETTINGER CO	7	01	1977	60	10.	3.	

DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0

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                                                    NORTH DAKOTA

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POL-MTH          POLLUTANT                SITE      AG/        LOCATION        INT  UNIT YEAR  NUM     MAX        ARITH
 CODE              NAME                   CODE      PRJ          NAME          CODE CODE       OBS     OBS        MEAN
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4240191 SULFUR DIOXIDE                 350560001 F03 HETTINGER CO               7    01  1978   30    8.           3.    *
                                       350700001 F03 MC KENZIE CO               7    01  1977   51    3.           3.
                                                                                7    01  1978   29    6.           3.    *
                                       350720002 F03 MC LEAN CO                 7    01  1977   60    8.           3.
                                                                                7    01  1978   29    5.           3.    *
                                       350740001 F01 MANDAN                     7    01  1977   61   15.           3.
                                                                                7    01  1978   29   10.           3.    *
                                       350760001 F01 MERCER CO                  7    01  1977   59    8.           3.
                                                                                7    01  1978   18   12.           4.    *
                                       350760002 F03 MERCER CO                  7    01  1977   61   12.           3.
                                                                                7    01  1978   30   39.           4.    *
                                       350800001 F03 MORTON CO                  7    01  1977    7    3.           3.    *
                                                                                7    01  1978   22    3.           3.    *
                                       350860001 F03 OLIVER CO                  7    01  1977   61    7.           3.
                                                                                7    01  1978   30    3.           3.    *
                                       351140001 F03 STARK CO                   7    01  1977   58   12.           3.
                                                                                7    01  1978   31    3.           3.    *
4260214 NITROGEN DIOXIDE               350200001 F03 BURLEIGH CO                1    07  1977 4753     .030        .004  *
                                                                                1    07  1978 4448     .020        .003  *
                                       350860001 F03 OLIVER CO                  1    07  1977 7878     .090        .003
                                                                                1    07  1978 7840     .050        .003
4260284 NITROGEN DIOXIDE               350080001 F03 BILLINGS CO                7    01  1978   14   34.          15.    *
                                       350100001 F01 BISMARCK                   7    01  1977   61   61.          25.
                                                                                7    01  1978   60   63.          26.
                                       350100002 F01 BISMARCK                   7    01  1977   54   53.          15.
                                                                                7    01  1978   41   40.          11.    *
                                       350200001 F03 BURLEIGH CO                7    01  1977   53   53.           9.
                                                                                7    01  1978   56   61.          14.
                                       350340002 F03 DUNN CO                    7    01  1977   59   28.           5.
                                                                                7    01  1978   39   26.          11.    *
                                       350400001 F01 FARGO                      7    01  1977   54   55.          30.
                                                                                7    01  1978   58   68.          39.
                                       350520001 F03 GRANT CO                   7    01  1977   61   12.           3.
                                                                                7    01  1978   59   26.           5.
                                       350560001 F03 HETTINGER CO               7    01  1977   60   15.           5.
                                                                                7    01  1978   41   43.          10.    *
                                       350700001 F03 MC KENZIE CO               7    01  1977   53  152.          20.
                                                                                7    01  1978   38   29.           7.    *
                                       350700002 F03 MC KENZIE CO               7    01  1978    4   34.          25.    *
                                       350720001 F03 MC LEAN CO                 7    01  1978   14   31.          12.    *
                                       350720002 F03 MC LEAN CO                 7    01  1977   60   20.           3.
                                                                                7    01  1978   40   22.           9.    *
                                       350740001 F01 MANDAN                     7    01  1977   62   71.          21.
                                                                                7    01  1978   61   45.          18.
                                       350760001 F01 MERCER CO                  7    01  1977   59   47.          16.
                                                                                7    01  1978   46  116.          17.
                                       350760002 F03 MERCER CO                  7    01  1977   61   26.           5.
                                                                                7    01  1978   59   68.          11.
"*" DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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                                        STATE INVENTORY BY POLLUTANT
                                                NORTH DAKOTA

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POL-MTH          POLLUTANT                SITE      AG/        LOCATION        INT  UNIT YEAR  NUM     MAX        ARITH
 CODE              NAME                   CODE      PRJ          NAME          CODE CODE       OBS     OBS        MEAN
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4260284 NITROGEN DIOXIDE                350800001 F03 MORTON CO                7    01  1977     7     8.           3.     *
                                                                               7    01  1978    37    51.           6.     *
                                        350860001 F03 OLIVER CO                7    01  1977    60    17.           7.
                                                                               7    01  1978    61    23.           9.
                                        351140001 F03 STARK CO                 7    01  1977    58    32.          10.
                                                                               7    01  1978    59    31.          11.
4420111 OZONE                           350200001 F03 BURLEIGH CO              1    07  1977  7237      .100         .035
                                                                               1    07  1978  6889      .110         .032
                                        350860001 F03 OLIVER CO                1    07  1977  8007      .070         .033
                                                                               1    07  1978  8093      .070         .033
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* DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0

NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
SOUTH DAKOTA

POL-UTN CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	430020001	F01	ABERDEEN	7	01	1977	28	221.	71.	*
					7	01	1978	11	182.	102.	*
		430110001	P03	BLACK HILLS NAT FOREST	7	01	1977	46	82.	14.	*
					7	01	1978	51	68.	13.	
		430140001	F01	BROOKINGS	7	01	1977	50	141.	42.	
					7	01	1978	42	124.	46.	
		430240001	F03	BUTTE CO	7	01	1977	6	27.	10.	*
					7	01	1978	16	64.	20.	*
		430640001	F02	GRANT CO	7	01	1978	22	103.	42.	*
		430640002	F02	GRANT CO	7	01	1978	20	107.	36.	*
		430760001	F03	HARDING CO	7	01	1977	5	25.	18.	*
					7	01	1978	14	38.	27.	*
		430780001	F03	HOT SPRINGS	7	01	1977	38	211.	51.	
					7	01	1978	24	132.	55.	*
		430820001	F01	HURON	7	01	1977	45	129.	48.	
					7	01	1978	43	226.	71.	*
		431240001	F01	MITCHELL	7	01	1977	27	151.	54.	*
					7	01	1978	27	188.	58.	
		431300001	F03	PENNINGTON CO	7	01	1977	6	88.	54.	*
		431320001	F03	PERKINS CO	7	01	1977	53	295.	32.	
					7	01	1978	50	164.	22.	
		431320001	F05	PERKINS CO	7	01	1977	34	278.	38.	*
					7	01	1978	47	111.	20.	
		431340001	F01	PIERRE	7	01	1977	59	126.	53.	
					7	01	1978	45	257.	55.	*
		431380001	F01	RAPID CITY	7	01	1977	48	293.	86.	
					7	01	1978	40	293.	91.	*
		431380002	F01	RAPID CITY	7	01	1977	48	288.	70.	
					7	01	1978	37	210.	72.	*
		431380005	F01	RAPID CITY	7	01	1977	51	301.	66.	
					7	01	1978	48	146.	63.	
		431380006	F01	RAPID CITY	7	01	1977	50	93.	39.	
					7	01	1978	50	139.	48.	
		431480001	P01	SIOUX FALLS	7	01	1977	46	129.	61.	
					7	01	1978	43	119.	54.	*
		431480002	F01	SIOUX FALLS	7	01	1977	48	140.	51.	
					7	01	1978	34	97.	50.	*
		431480003	F01	SIOUX FALLS	7	01	1977	48	156.	66.	*
		431480004	F01	SIOUX FALLS	7	01	1977	51	125.	49.	
					7	01	1978	48	130.	47.	
		431520001	F02	SPEARFISH	7	01	1977	24	91.	32.	*
		431760001	F01	WATERTOWN	7	01	1977	42	175.	58.	
					7	01	1978	41	120.	52.	
		431800001	F03	YANKTON	7	01	1977	52	191.	70.	
					7	01	1978	53	137.	53.	
4240191	SULFUR DIOXIDE	430110001	P03	BLACK HILLS NAT FOREST	7	01	1977	47	3.	3.	
		430760001	F03	HARDING CO	7	01	1977	19	8.	4.	*
					7	01	1978	3	5.	3.	*

'*' DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0

NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
SOUTH DAKOTA

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
4240191	SULFUR DIOXIDE	431340001	F01	PIERRE	7	01	1977	39	6.	3.	*
					7	01	1978	15	3.	3.	*
		431380001	F01	RAPID CITY	7	01	1977	37	11.	3.	*
					7	01	1978	15	5.	3.	*
		431380002	F01	RAPID CITY	7	01	1977	16	40.	5.	*
		431480002	F01	SIOUX FALLS	7	01	1977	33	15.	4.	*
					7	01	1978	2	3.	3.	*
		431480003	F01	SIOUX FALLS	7	01	1977	2	44.	32.	*
4240197	SULFUR DIOXIDE	430640001	F02	GRANT CO	7	01	1978	30	25.	4.	*
		430760001	F03	HARDING CO	7	01	1978	17	7.	3.	*
		431340001	F01	PIERRE	7	01	1978	36	6.	3.	*
		431380001	F01	RAPID CITY	7	01	1978	32	6.	3.	*
		431480002	F01	SIOUX FALLS	7	01	1978	33	5.	3.	*
4260284	NITROGEN DIOXIDE	430110001	F03	BLACK HILLS NAT FOREST	7	01	1977	40	12.	3.	
					7	01	1978	35	21.	3.	*
		430640001	F02	GRANT CO	7	01	1978	32	16.	4.	*
		430760001	F03	HARDING CO	7	01	1977	17	65.	13.	*
					7	01	1978	22	12.	5.	*
		431340001	F01	PIERRE	7	01	1977	18	31.	17.	*
					7	01	1978	45	33.	14.	*
		431380001	F01	RAPID CITY	7	01	1977	15	73.	39.	*
					7	01	1978	42	62.	20.	*
		431480002	F01	SIOUX FALLS	7	01	1977	19	47.	27.	*
					7	01	1978	30	32.	18.	*

* DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 1, SEC 2.3.0

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                                           STATE INVENTORY BY POLLUTANT
                                                      UTAH

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POL-MTH        POLLUTANT              SITE      AG/         LOCATION        INT  UNIT YEAR  NUM    MAX        ARITH
 CODE            NAME                 CODE      PRJ           NAME          CODE CODE       OBS    OBS        MEAN
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1110191 PARTICULATE                 460060001 F01 BOUNTIFUL                  7    01  1977  334   396.         72.
                                                                             7    01  1978  333   182.         60.
                                    460140001 F02 CARBON CO                  7    01  1977  257   144.         39.
                                                                             7    01  1978  176    93.         37.
                                    460160001 F01 CEDAR CITY                 7    01  1977  252   151.         55.
                                                                             7    01  1978  333   262.         56.
                                    460280001 K03 EMERY CO                   7    01  1977   85    83.         24.    *
                                                                             7    01  1978   19    58.         20.    *
                                    460280003 K03 EMERY CO                   7    01  1977   76    75.         26.    *
                                                                             7    01  1978   22    41.         20.    *
                                    460280004 F02 EMERY CO                   7    01  1977  189   665.         59.    *
                                                                             7    01  1978  268   170.         47.
                                    460300002 K03 GARFIELD CO                7    01  1977  140   294.         70.
                                                                             7    01  1978   26    36.         18.    *
                                    460300003 K03 GARFIELD CO                7    01  1977  120   153.         47.
                                                                             7    01  1978   17    24.          7.    *
                                    460380001 F03 JUAB CO                    7    01  1978  190   126.         38.    *
                                    460400001 F01 KANE CO                    7    01  1977  326   423.         26.
                                    460400002 F01 KANE CO                    7    01  1977  340   661.         32.
                                                                             7    01  1978  156   186.         16.
                                    460400003 K03 KANE CO                    7    01  1977  133   176.         23.
                                                                             7    01  1978   19    54.         12.    *
                                    460440001 F01 KEARNS                     7    01  1977  108   475.        106.    *
                                    460480001 F01 LEHI                       7    01  1977  284   470.         85.
                                    460520001 F02 MAGNA                      7    01  1977  345   576.         99.
                                                                             7    01  1978  340   535.         70.
                                    460520902 P02 MAGNA                      7    01  1977   15   198.         93.    *
                                    460560001 F05 MILLARD CO                 7    01  1977  136   242.         80.    *
                                                                             7    01  1978  139   276.         93.    *
                                    460680001 F01 OGDEN                      7    01  1977  348   524.         94.
                                                                             7    01  1978  288   281.         87.    *
                                    460680001 P01 OGDEN                      7    01  1977   45   175.         81.
                                                                             7    01  1978   54   178.         83.
                                    460700001 F01 OREM                       7    01  1977  243   447.         95.    *
                                    460760001 F01 PLEASANT GROVE             7    01  1977  346   436.         94.
                                                                             7    01  1978  328   242.         81.
                                    460780001 F01 PRICE                      7    01  1977  333   406.         80.
                                                                             7    01  1978  191   303.         71.    *
                                    460800001 F01 PROVO                      7    01  1977  332   897.         93.
                                                                             7    01  1978  327   254.         85.
                                    460900001 P02 SALT LAKE CO               7    01  1977   14   330.        114.    *
                                    460920001 F01 SALT LAKE CITY             7    01  1977  349   473.        172.
                                                                             7    01  1978  344   284.        103.
                                    460920001 P01 SALT LAKE CITY             7    01  1977   45   281.        102.
                                                                             7    01  1978   49   261.         99.
                                    460920004 F01 SALT LAKE CITY             7    01  1977  313   414.         98.
                                                                             7    01  1978  286   411.         76.
                                    460960001 K03 SAN JUAN CO                7    01  1977  115   310.         42.
"*" DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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                                     NATIONAL AEROMETRIC DATA BANK
                                     STATE INVENTORY BY POLLUTANT
                                                 UTAH
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POL-NTN        POLLUTANT             SITE      AG/      LOCATION         INT  UNIT YEAR  NUM    MAX      ARITH
 CODE            NAME                CODE      PRJ        NAME           CODE CODE       OBS    OBS      MEAN
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                                 460960001 K03 SAN JUAN CO                7   01  1978   17     15.       7.   *
1110191 PARTICULATE              460960002 K03 SAN JUAN CO                7   01  1977  123    220.      33.
                                                                          7   01  1978   21    124.      17.   *
                                 460960003 K03 SAN JUAN CO                7   01  1977  125    346.      38.
                                                                          7   01  1978   27     27.      13.   *
                                 461160001 F01 TOOELE                     7   01  1977  322   1799.      50.
                                                                          7   01  1978  336    207.      51.
                                 461200001 F01 UINTAH CO                  7   01  1977   93    190.      36.   *
                                                                          7   01  1978  340    105.      35.
                                 461200003 J03 UINTAH CO                  7   01  1977    3     20.      15.   *
                                 461200004 J03 UINTAH CO                  7   01  1977    3     15.      13.   *
                                 461200006 J03 UINTAH CO                  7   01  1977    2     31.      27.   *
                                 461200007 J03 UINTAH CO                  7   01  1977    3     22.      18.   *
                                 461220001 F01 UTAH CO                    7   01  1977  288    416.      95.
                                                                          7   01  1978  337    271.      88.
                                 461220002 F01 UTAH CO                    7   01  1977  210    272.      69.   *
                                 461220003 F02 UTAH CO                    7   01  1977  240    245.      98.   *
                                 461280001 K03 WASHINGTON CO              7   01  1977  136    170.      79.
                                                                          7   01  1978   27     17.       8.   *
                                 461280002 K03 WASHINGTON CO              7   01  1977  140     96.      25.
                                                                          7   01  1978   26     15.       6.   *
                                 461280003 F02 WASHINGTON CO              7   01  1977  229    175.      40.
                                                                          7   01  1978  155    193.      26.   *
1110192 PARTICULATE              460900001 P07 SALT LAKE CO               7   01  1977    1     54.      54.   *
4210111 CARBON MONOXIDE          460060001 F01 BOUNTIFUL                  1   07  1977 5018     27.0      1.8  *
                                                                          1   07  1978 7630     18.0      1.2
                                 460520001 F02 MAGNA                      1   07  1977 5546     10.0      1.0  *
                                 460680001 F01 OGDEN                      1   07  1977 7909     21.0      2.6
                                                                          1   07  1978 8144     19.0      1.8
                                 460800001 F01 PROVO                      1   07  1977 8580     25.0      3.0
                                                                          1   07  1978 6162     23.0      2.3  *
                                 460920001 F01 SALT LAKE CITY             1   07  1977 8455     31.0      2.8
                                                                          1   07  1978 8247     27.0      2.4
                                 461220001 F01 UTAH CO                    1   07  1977 2197     11.0       .7  *
4210121 CARBON MONOXIDE          461200006 J03 UINTAH CO                  1   07  1977  360       .9       .3  *
4240113 SULFUR DIOXIDE           460160001 F01 CEDAR CITY                 1   07  1977 6247      .63      .03 *
                                                                          1   07  1978 3632      .42      .03 *
                                 460440001 F01 KEARNS                     1   07  1977 2474      .51      .02 *
                                 460480001 F01 LEHI                       1   07  1977 4861      .10      .01 *
                                 461160001 F01 TOOELE                     1   07  1977 6726     1.24      .02
                                                                          1   07  1978 7132      .68      .01
4240114 SULFUR DIOXIDE           460520902 A05 MAGNA                      1   07  1977 1808     1.600     .134 *
                                 460900001 P07 SALT LAKE CO               1   07  1977 2016     2.540     .093 *
4240116 SULFUR DIOXIDE           460060001 F01 BOUNTIFUL                  1   07  1977 7629      .450     .013
                                                                          1   07  1978 8217      .200     .007
                                 460140001 F02 CARBON CO                  1   07  1977 7794      .050     .001
                                                                          1   07  1978 3901      .030     .002 *
                                 460280004 F02 EMERY CO                   1   07  1977 3761      .010     .001 *
   DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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POL-MTH           POLLUTANT                 SITE      AG/        LOCATION          INT  UNIT YEAR  NUM    MAX       ARITH
 CODE               NAME                    CODE      PRJ          NAME            CODE CODE       OBS    OBS       MEAN
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4240116 SULFUR DIOXIDE                    460280004 F02 EMERY CO                   1    07  1978 6002    .090       .002  *
                                          460380001 F03 JUAB CO                    1    07  1978 3179    .010       .001  *
                                          460400002 F03 KANE CO                    1    07  1977  651    .001       .001  *
                                          460520001 F02 MAGNA                      1    07  1977 6192    .930       .052  *
                                          460680001 F01 OGDEN                      1    07  1977 8613    .110       .004
                                                                                   1    07  1978 7693    .040       .002
                                          460780001 F01 PRICE                      1    07  1977 5081    .050       .004  *
                                          460800001 F01 PROVO                      1    07  1977 6252    .120       .007  *
                                          460920001 F01 SALT LAKE CITY             1    07  1977 6464    .260       .012  *
                                          461200001 F01 UINTAH CO                  1    07  1977 1553    .001       .001  *
                                                                                   1    07  1978 7202    .010       .001
                                          461200003 J03 UINTAH CO                  1    08  1977  342   2.         1.     *
                                          461200004 J03 UINTAH CO                  1    08  1977  340   5.         1.     *
                                          461200006 J03 UINTAH CO                  1    08  1977 1050   1.         1.     *
                                          461200007 J03 UINTAH CO                  1    08  1977  338   4.         1.     *
                                          461220001 F01 UTAH CO                    1    07  1977 5730    .080       .003  *
                                          461280003 F02 WASHINGTON CO              1    07  1977 5702    .010       .001  *
                                                                                   1    07  1978 2621    .020       .001  *
4240120 SULFUR DIOXIDE                    460280005 F03 EMERY CO                   1    07  1978  751    .010       .001  *
                                          460400002 F03 KANE CO                    1    07  1977 1457    .060       .002  *
                                                                                   1    07  1978 3007    .030       .001  *
                                          460520001 F02 MAGNA                      1    07  1977 2200   1.130       .107  *
                                                                                   1    07  1978 8624   1.030       .036
                                          460560002 F03 MILLARD CO                 1    07  1978 3572    .050       .001  *
                                          460780001 F01 PRICE                      1    07  1977 2161    .060       .006  *
                                                                                   1    07  1978 5038    .070       .004  *
                                          460920001 F01 SALT LAKE CITY             1    07  1977 2181    .230       .015  *
                                                                                   1    07  1978 6113    .120       .007  *
4240191 SULFUR DIOXIDE                    460920001 P01 SALT LAKE CITY             7    01  1977   58 163.        22.
4260214 NITROGEN DIOXIDE                  460060001 F01 BOUNTIFUL                  1    07  1977 8716    .200       .024
                                                                                   1    07  1978 7680    .150       .020
                                          460140001 F02 CARBON CO                  1    07  1977 1561    .040       .007  *
                                                                                   1    07  1978 3990    .040       .007  *
                                          460280004 F02 EMERY CO                   1    07  1977 4959    .040       .005  *
                                                                                   1    07  1978 7586    .040       .006
                                          460280005 F03 EMERY CO                   1    07  1978  980    .040       .008  *
                                          460380001 F03 JUAB CO                    1    07  1978 4171    .030       .005  *
                                          460400002 F03 KANE CO                    1    07  1977  999    .030       .003  *
                                                                                   1    07  1978 3158    .020       .003  *
                                          460520001 F02 MAGNA                      1    07  1977 8161    .120       .016
                                                                                   1    07  1978 8500    .100       .014
                                          460560002 F03 MILLARD CO                 1    07  1978 2982    .040       .003  *
                                          460680001 F01 OGDEN                      1    07  1977 8478    .180       .029
                                                                                   1    07  1978 4738    .110       .027  *
                                          460800001 F01 PROVO                      1    07  1977 7910    .110       .025
                                                                                   1    07  1978 2808    .090       .022  *
                                          460920001 A05 SALT LAKE CITY             1    07  1977 2919    .250       .044  *
                                          460920001 F01 SALT LAKE CITY             1    07  1977 7904    .250       .041
"*" DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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                                                    UTAH
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POL-UTN             POLLUTANT
 CODE                 NAME                SITE      AG/      LOCATION       INT  UNIT YEAR  NUM     MAX        ARITH
                                          CODE      PRJ        NAME         CODE CODE       OBS     OBS        MEAN
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4260214 NITROGEN DIOXIDE               460920001 F01 SALT LAKE CITY          1    07  1978 5900     .140       .035  *
                                       461200001 F01 UINTAH CO               1    07  1977 1788     .050       .009  *
                                                                             1    07  1978 4167     .080       .010  *
                                       461200006 J03 UINTAH CO               1    07  1977  311     .006       .003  *
                                       461220001 F01 UTAH CO                 1    07  1977 8604     .080       .013
                                                                             1    07  1978 8283     .070       .013
                                       461280003 F02 WASHINGTON CO           1    07  1977 6154     .030       .003  *
                                                                             1    07  1978 1922     .020       .003  *
4260284 NITROGEN DIOXIDE               460920001 P01 SALT LAKE CITY          7    01  1977   53  119.        44.
4310111 TOTAL HYDROCARBON              461200006 J03 UINTAH CO               1    07  1977  360    4.3         2.0   *
4420111 OZONE                          460060001 F01 BOUNTIFUL               1    07  1977 8614     .145       .025
                                                                             1    08  1978 8688  214.        29.
                                       460520001 F02 MAGNA                   1    07  1977 1303     .037       .009  *
                                       460680001 F01 OGDEN                   1    07  1977 4797     .115       .020  *
                                                                             1    08  1978 6511  128.        29.   *
                                       460800001 F01 PROVO                   1    07  1977 8672     .107       .019
                                                                             1    08  1978 8438  144.        22.
                                       460920001 F01 SALT LAKE CITY          1    07  1977 8311     .117       .020
                                                                             1    08  1978 7957  244.        29.
                                       461200006 J03 UINTAH CO               1    07  1977  349     .050       .028  *
                                       461220001 F01 UTAH CO                 1    07  1977 8554     .079       .021
                                                                             1    08  1978 4453   86.        27.   *




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NATIONAL AEROMETRIC DATA BANK
STATE INVENTORY BY POLLUTANT
WYOMING

POL-UTN CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	520040001	F01	BIG HORN CO	7	01	1977	43	120.	42.	*
					7	01	1978	57	210.	47.	
		520060001	F03	BUFFALO	7	01	1977	30	27.	10.	*
					7	01	1978	45	37.	14.	
		520080001	F03	CAMPBELL CO	7	01	1977	8	35.	24.	*
		520080002	F03	CAMPBELL CO	7	01	1977	43	91.	27.	
					7	01	1978	27	80.	20.	*
		520100003	F03	CARBON CO	7	01	1978	7	136.	47.	*
		520120001	F01	CASPER	7	01	1977	60	164.	67.	
					7	01	1978	18	179.	74.	*
		520140001	F01	CHEYENNE	7	01	1977	57	84.	42.	
					7	01	1978	61	134.	46.	
		520160001	F01	CODY	7	01	1977	33	189.	39.	*
		520180001	F03	CONVERSE CO	7	01	1977	52	98.	35.	
					7	01	1978	27	53.	22.	*
		520180006	F03	CONVERSE CO	7	01	1977	52	72.	14.	
					7	01	1978	44	68.	18.	*
		520200001	F01	CROOK CO	7	01	1977	8	78.	47.	*
		520200002	F03	CROOK CO	7	01	1977	57	48.	13.	
					7	01	1978	55	48.	14.	
		520220002	F01	DOUGLAS	7	01	1977	33	152.	27.	*
					7	01	1978	12	22.	10.	*
		520220002	F03	DOUGLAS	7	01	1978	52	118.	26.	
		520240001	F01	EVANSTON	7	01	1977	51	167.	62.	
					7	01	1978	42	137.	61.	
		520260001	F03	FREMONT CO	7	01	1978	7	3.	2.	*
		520280002	F01	GILLETTE	7	01	1978	13	176.	64.	*
		520300001	F03	GOSHEN CO	7	01	1977	32	43.	15.	*
		520300002	F03	GOSHEN CO	7	01	1977	31	35.	16.	*
		520300003	F03	GOSHEN CO	7	01	1977	58	109.	33.	
					7	01	1978	57	119.	29.	
		520320001	F01	GREEN RIVER	7	01	1977	43	100.	44.	*
		520360001	F03	JOHNSON CO	7	01	1977	57	38.	9.	
					7	01	1978	50	27.	9.	
		520400005	F01	LARAMIE	7	01	1977	53	85.	40.	
					7	01	1978	53	119.	41.	
		520440002	F01	LINCOLN CO	7	01	1977	59	142.	29.	
					7	01	1978	15	44.	21.	*
		520440002	F03	LINCOLN CO	7	01	1978	58	110.	35.	
		520440003	F03	LINCOLN CO	7	01	1977	16	39.	19.	*
					7	01	1978	17	53.	28.	*
		520480001	F01	NEWCASTLE	7	01	1977	55	75.	26.	
					7	01	1978	13	31.	12.	*
		520480001	F03	NEWCASTLE	7	01	1978	29	58.	23.	*
		520480002	F01	NEWCASTLE	7	01	1978	22	109.	41.	*
		520500001	F03	NIOBRARA CO	7	01	1977	12	24.	11.	*
					7	01	1978	49	56.	17.	
		520520002	F01	PARK CO	7	01	1977	49	92.	23.	

"*" DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL. 3, SEC 2.3.0

STATE INVENTORY BY POLLUTANT

WYOMING

POL-MTH CODE	POLLUTANT NAME	SITE CODE	AG/ PRJ	LOCATION NAME	INT CODE	UNIT CODE	YEAR	NUM OBS	MAX OBS	ARITH MEAN	
1110191	PARTICULATE	520520002	F03	PARK CO	7	01	1978	51	328.	23.	
		520540001	F03	PLATTE CO	7	01	1977	50	99.	16.	
					7	01	1978	31	31.	15.	*
		520580001	F01	RAWLINS	7	01	1977	55	49.	23.	
					7	01	1978	15	29.	13.	*
		520580001	F03	RAWLINS	7	01	1978	34	67.	19.	*
		520600001	F01	RIVERTON	7	01	1977	56	79.	37.	
					7	01	1978	52	91.	40.	
		520620001	F01	ROCK SPRINGS	7	01	1977	44	220.	94.	
					7	01	1978	61	360.	130.	
		520620002	F01	ROCK SPRINGS	7	01	1977	61	127.	52.	
					7	01	1978	42	151.	60.	*
		520620003	F01	ROCK SPRINGS	7	01	1977	55	260.	61.	
					7	01	1978	60	338.	61.	
		520660001	F01	SHERIDAN CO	7	01	1977	31	197.	22.	*
		520660002	F01	SHERIDAN CO	7	01	1977	54	200.	28.	
					7	01	1978	13	55.	29.	*
		520660002	F03	SHERIDAN CO	7	01	1978	57	94.	29.	
		520680001	F01	SUBLETTE CO	7	01	1977	60	62.	11.	
					7	01	1978	12	8.	5.	*
		520680001	F03	SUBLETTE CO	7	01	1978	54	36.	13.	
		520700001	F01	SWEETWATER CO	7	01	1977	58	102.	37.	
					7	01	1978	55	121.	38.	
		520700007	F01	SWEETWATER CO	7	01	1977	56	45.	18.	
					7	01	1978	12	17.	11.	*
		520700007	F03	SWEETWATER CO	7	01	1978	30	39.	17.	*
		520700007	J02	SWEETWATER CO	7	01	1977	9	27.	20.	*
		520700008	J02	SWEETWATER CO	7	01	1977	9	35.	23.	*
		520700009	J02	SWEETWATER CO	7	01	1977	7	29.	21.	*
		520700010	J02	SWEETWATER CO	7	01	1977	10	25.	20.	*
		520700011	J02	SWEETWATER CO	7	01	1977	5	43.	30.	*
		520700012	J02	SWEETWATER CO	7	01	1977	3	18.	15.	*
		520700013	J02	SWEETWATER CO	7	01	1977	5	109.	65.	*
		520700014	J02	SWEETWATER CO	7	01	1977	6	35.	21.	*
		520700015	J02	SWEETWATER CO	7	01	1977	6	38.	23.	*
		520700016	F03	SWEETWATER CO	7	01	1977	57	116.	21.	
					7	01	1978	52	63.	22.	
		520720001	F01	TETON CO	7	01	1977	52	51.	11.	
					7	01	1978	12	16.	6.	*
		520720001	F03	TETON CO	7	01	1978	44	42.	11.	
		520740001	F01	THERMOPOLIS	7	01	1977	59	58.	23.	
					7	01	1978	10	33.	17.	*
		520740001	F03	THERMOPOLIS	7	01	1978	10	33.	17.	*
		520760001	F01	TORRINGTON	7	01	1977	48	83.	34.	
					7	01	1978	14	43.	22.	*
		520760001	F03	TORRINGTON	7	01	1978	30	64.	27.	*
		520800001	F01	WASHAKIE CO	7	01	1977	21	12.	4.	*
		520820001	F01	WESTON CO	7	01	1977	45	140.	21.	

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                              NATIONAL AEROMETRIC DATA BANK
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POL-MTH       POLLUTANT                SITE     AG/        LOCATION           INT  UNIT YEAR  NUM    MAX        ARITH
 CODE           NAME                   CODE     PRJ          NAME             CODE CODE        OBS    OBS        MEAN
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1110191 PARTICULATE                  520820001 F03 WESTON CO                   7    01  1978   27   46.          17.     *
                                     520830001 F01 WHEATLAND                   7    01  1977   47   79.          31.
                                                                               7    01  1978   53  194.          44.
                                     520840001 F01 WORLAND                     7    01  1977   59   98.          42.
                                                                               7    01  1978   58  105.          46.
                                     520860001 P03 YELLOWSTONE NAT PARK        7    01  1977   37   31.          12.     *
                                                                               7    01  1978   12  533.          52.     *
4240111 SULFUR DIOXIDE               520700016 F03 SWEETWATER CO               1    07  1978 1144     .03          .01   *
4240116 SULFUR DIOXIDE               520180006 F03 CONVERSE CO                 1    07  1977 8437     .050         .001
                                                                               1    07  1978 4965     .040         .001  *
                                     520700016 F03 SWEETWATER CO               1    07  1977 8559     .130         .001
                                                                               1    07  1978 5134     .150         .001  *
4240191 SULFUR DIOXIDE               520080001 F03 CAMPBELL CO                 7    01  1977   10    3.           3.     *
                                     520120001 F01 CASPER                      7    01  1977   58   23.           4.
                                                                               7    01  1978   15   28.           8.     *
                                     520140001 F01 CHEYENNE                    7    01  1977   57   21.           4.
                                                                               7    01  1978   15    6.           3.     *
                                     520180004 F03 CONVERSE CO                 7    01  1977   41    3.           3.     *
                                     520220002 F01 DOUGLAS                     7    01  1978   10    3.           3.     *
                                     520220002 F03 DOUGLAS                     7    01  1978   10    3.           3.     *
                                     520300001 F03 GOSHEN CO                   7    01  1977   30    3.           3.     *
                                     520440003 F03 LINCOLN CO                  7    01  1977   16    3.           3.     *
                                                                               7    01  1978    4    3.           3.     *
                                     520500001 F03 NIOBRARA CO                 7    01  1977   13    3.           3.     *
                                                                               7    01  1978   12    3.           3.     *
                                     520540001 F03 PLATTE CO                   7    01  1977   58    6.           3.
                                                                               7    01  1978   13    3.           3.     *
                                     520620001 F01 ROCK SPRINGS                7    01  1977   44    6.           3.     *
                                                                               7    01  1978   15    7.           3.     *
                                     520700008 J02 SWEETWATER CO               7    01  1977    4    3.           3.     *
                                     520700009 J02 SWEETWATER CO               7    01  1977    3    3.           3.     *
                                     520820001 F03 WESTON CO                   7    01  1977   54   13.           3.
                                                                               7    01  1978   14    3.           3.     *
                                     520860001 P03 YELLOWSTONE NAT PARK        7    01  1977   51    3.           3.
4240197 SULFUR DIOXIDE               520120001 F01 CASPER                      7    01  1978    3    3.           3.     *
                                     520140001 F01 CHEYENNE                    7    01  1978   30    6.           3.     *
                                     520220002 F03 DOUGLAS                     7    01  1978   27    3.           3.     *
                                     520280002 F01 GILLETTE                    7    01  1978   21    3.           3.     *
                                     520480002 F01 NEWCASTLE                   7    01  1978   16   16.           4.     *
                                     520500001 F03 NIOBRARA CO                 7    01  1978   30    3.           3.     *
4260211 NITROGEN DIOXIDE             520700016 F03 SWEETWATER CO               1    07  1978 1208     .08          .01   *
4260214 NITROGEN DIOXIDE             520180006 F03 CONVERSE CO                 1    07  1977 8491     .030         .003
                                                                               1    07  1978 1713     .040         .003  *
                                     520700016 F03 SWEETWATER CO               1    07  1977 4452     .080         .005  *
                                                                               1    07  1978 2276     .080         .005  *
4260284 NITROGEN DIOXIDE             520080001 F03 CAMPBELL CO                 7    01  1977   10   10.           4.     *
                                     520120001 F01 CASPER                      7    01  1977   59   48.          17.
                                                                               7    01  1978   24   62.          26.     *
"*" DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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                                                 STATE INVENTORY BY POLLUTANT                                        PAGE 52-0025
                                                           WYOMING
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POL-MTH          POLLUTANT                   SITE     AG/        LOCATION          INT  UNIT YEAR  NUM    MAX        ARITH
 CODE              NAME                      CODE     PRJ          NAME            CODE CODE       OBS    OBS        MEAN
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4260284 NITROGEN DIOXIDE               520140001 F01 CHEYENNE                   7    01  1977   53    61.         26.
                                                                                 7    01  1978   59    41.         21.
                                       520180004 F03 CONVERSE CO                7    01  1977   40    12.          6.   *
                                       520220002 F01 DOUGLAS                    7    01  1978   10     8.          4.   *
                                       520220002 F03 DOUGLAS                    7    01  1978   50    10.          4.
                                       520280002 F01 GILLETTE                   7    01  1978   20    23.         12.   *
                                       520300001 F03 GOSHEN CO                  7    01  1977   32    31.          6.   *
                                       520440003 F03 LINCOLN CO                 7    01  1977   15     3.          3.   *
                                                                                 7    01  1978   11    25.         10.   *
                                       520480002 F01 NEWCASTLE                  7    01  1978   21    18.          6.   *
                                       520500001 F03 NIOBRARA CO                7    01  1977   13     6.          3.   *
                                                                                 7    01  1978   54     9.          5.
                                       520540001 F03 PLATTE CO                  7    01  1977   58     9.          3.
                                                                                 7    01  1978   40    15.          6.   *
                                       520620001 F01 ROCK SPRINGS               7    01  1977   45    51.         26.   *
                                                                                 7    01  1978   61    58.         29.
                                       520820001 F03 WESTON CO                  7    01  1977   51    21.          5.
                                                                                 7    01  1978   30    17.          6.   *
                                       520860001 P03 YELLOWSTONE NAT PARK       7    01  1977   51     6.          3.
                                                                                 7    01  1978   13    36.          7.   *
4420111 OZONE                          520180006 F03 CONVERSE CO                1    07  1977 2912      .110        .025 *
                                                                                 1    07  1978 5344      .070        .035 *
                                       520700016 F03 SWEETWATER CO              1    07  1977 3185      .060        .022 *
                                                                                 1    07  1978 5517      .070        .027 *

* DENOTES A VALUE DERIVED FROM DATA WHICH DO NOT MEET SAROAD SUMMARIZATION CRITERIA OF OAQPS GUIDELINE 1.2-040, VOL 3, SEC 2.3.0
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